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ABSTRACT

A study determined the degree of success that institutions achieve in meeting their articulation program goals. Data were collected through literature review, questionnaires to 462 secondary and postsecondary institutions, and visits to five exemplary articulation sites. Study respondents reported that they were most successful in reaching the articulation goals of program improvement and increased service to students. Increased service to employers and student retention were moderately successful outcomes. The study also identified factors contributing to institutions being able to achieve their outcomes: articulation as a high priority of state education officials; effective interpersonal relations; strong commitment by local administrators; open communication channels; well-written, carefully planned articulation agreement; modest goals; initial and continuing commitment and leadership by key institutional personnel; effective local leadership; well-developed curricula; remediation services; transportation services; program promotion; and impartial program coordination. Recommendations were made for practitioners regarding key factors to consider when implementing articulation programs or modifying such programs. (The instrument is appended.) (YLB)

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FACTORS INFLUENCING THE SUCCESS OF SECONDARY/POSTSECONDARY VOCATIONAL-TECHNICAL EDUCATION ARTICULATION PROGRAMS

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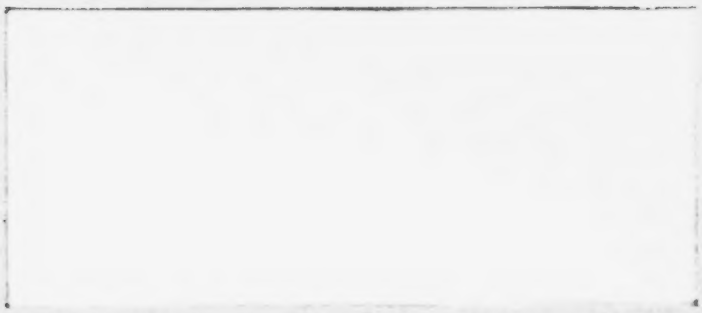

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FOREWORD

A number of educational institutions have placed great importance on providing an articulation program that is beneficial to the students they serve. If educators in postsecondary schools and secondary schools are to make substantial progress in improving articulation programs, it is essential that they have information about their success in achieving articulation program goals and the factors influencing the attainment of articulation program goals. It is also essential that policymakers and decision makers have information to enable them to optimize their limited resources to provide the best articulation programs possible.

This document provides information regarding the degree of success educational institutions achieve in meeting their articulation program goals and analyzes information concerning the factors that influence the attainment of those goals. The target audiences for this report are state and federal policymakers for secondary and postsecondary education as well as local administrators likely to be involved in developing new programs or improving current programs.

The study was conducted in the Evaluation and Policy Division headed by Dr. N. L. McCaslin, Associate Director, the National Center for Research in Vocational Education. Dr. Floyd L. McKinney, Senior Research Specialist, served as project director. Project staff members were Dr. Ernest L. Fields, Research Specialist; Paula K. Kurth, Program Assistant; and Trudy Anderson and Freeman E. Kelly, Graduate Research Associates. Final editorial review of this report was provided by the Editorial Services under the direction of Judy Balogh.

This project was sponsored by the Office of Vocational and Adult Education, U.S. Department of Education.

Ray D. Ryan
Executive Director
The National Center for Research
in Vocational Education

EXECUTIVE SUMMARY

This study has attempted to determine the degree of success institutions achieve in meeting their articulation program goals and to identify the factors contributing to institutions being able to achieve their articulation program goals. Data for the study came from a review of the literature, on-site visits to local exemplary articulation programs, and questionnaires mailed to postsecondary and secondary institutions engaged in vocational-technical education articulation programs for at least 3 years.

Findings

Based on an analysis of the data, the following were identified as commonly accepted goals of vocational-technical education articulation programs:

- Increased service to students
- Program improvement
- Student retention
- Program cost reduction
- Increased service to employers

Study respondents reported that they were most successful in reaching the articulation goals of program improvement and increased service to students. Increased service to employers and student retention were moderately successful outcomes.

Based on an analysis of the data, the following factors were identified as contributing to institutions being able to achieve their vocational-technical education articulation program outcomes:

- State education officials viewing vocational-technical education program articulation as a high priority
- Highly effective interpersonal (collegial) relations existing between postsecondary and secondary faculty
- Postsecondary and secondary instructors having equal credibility
- Local administrators being strongly committed to program articulation

- Open communication channels existing between all key personnel
- Well-written, carefully planned articulation agreements, standardizing and formalizing key procedures
- Modest goals being set initially that can be achieved with reasonable effort
- Key institutional personnel exercising initial and continuing commitment and leadership for program articulation (Those most frequently identified at the postsecondary level were deans of instruction, deans of vocational-technical education, and faculty; at the secondary level, directors of vocational-technical education, teachers, and principals. In all instances, commitment and leadership of the chief administrative officer is essential.)
- Effective leadership existing at the local level (In contrast to the state level, local level leadership is more effective.)
- Postsecondary and secondary teachers developing curriculum with clearly identified standard competencies and competency-based programs
- Remediation services being provided
- Transportation services being provided
- The program being promoted through students, teachers, and counselors
- The program being coordinated by individuals designated by their respective institution, whether the coordination is shared among institutions or whether one individual coordinates across institutions
- Articulation program coordination being impartial and not favoring or promoting one institution over another

Insufficient evidence was collected to suggest some factors as being important, although, in the judgment of the study staff, these elements would enhance vocational-technical education articulation programs. Minimal use was made of

- program evaluation efforts, formative and summative;
- shared facilities and equipment; and
- active vocational-technical education youth organizations.

Recommendations

Based on an analysis and synthesis of the information collected, the following recommendations are made for the improvement of current or the implementation of new vocational-technical education articulation programs:

- Articulation program goals should be developed jointly by stakeholders (administrators, supervisors, teachers, business/industry representatives, parents, and students).
- Articulation program goals should be realistic and attainable.
- Articulation program stakeholders should be involved in strategic planning and program evaluation processes.
- Stakeholders should be involved in the initial articulation program planning processes.
- Strong commitment for articulation programs must be evidenced by governing boards, chief executive officers, managers, teachers, counselors, and other staff.
- Stakeholders must be committed to overcoming barriers to make the articulation program effective and efficient.
- Postsecondary and secondary schools that are planning or maintaining articulation programs should schedule regular joint meetings of key personnel (administrators, counselors, and teachers) to address issues and concerns.
- A continuous flow of information about the articulation program must be maintained to all stakeholders and especially to potential students.
- Staff development programs should be planned and conducted for staff who have responsibilities for planning, implementing, and maintaining articulation programs.
- Communication channels and designation of responsibility regarding the articulation program must be clear among all participating institutions.
- Facilities and equipment for articulation programs should be shared where distances for student travel are not prohibitive.
- Key articulation program staff should be encouraged to visit exemplary articulation programs to observe different strategies and processes.

- Extern programs should be developed that would allow prospective articulation program students to spend one or 2 days with a student currently enrolled in an articulation program.

- Articulation program alumni should be used as speakers at dinners, receptions, and career nights to inform staff and potential students about the articulation programs.

- A process should be developed to facilitate postsecondary and secondary articulation program teachers meeting on a regular basis to discuss mutual concerns.

- Institutions should focus on common mutual goals developed to improve educational programs and services rather than focus on individual institutional "turf" rights and privileges.

- Competencies essential for students to acquire should be identified, the curriculum should be built on these competencies, and the curriculum sequence should be jointly determined as should the institutional responsibilities for delivering the articulation program.

- A written articulation program agreement should be developed that clearly specifies goals and institutional responsibilities.

- An individual should be assigned responsibility for the articulation program.

- State agencies should encourage vocational-technical education program articulation.

CHAPTER 1

INTRODUCTION

Background

Eighty percent of the adult population in our nation do not hold bachelor's degrees, nor do they need them to perform their jobs. According to Parnell (1985), however, the existing high school tracks for the middle 50-60 percent of our high school students who are not college bound are not appropriate for preparing young people to take their places as the workers of tomorrow. Specifically, Parnell (1986) notes that

> the academic and vocational desert of American education . . . is the high school general education program. Too many young people are receiving an unfocused general education which relates to nothing, leads to nothing, and prepares for nothing. It certainly does little to promote continuity in learning or to build personal confidence and self-esteem. (p. 16)

The deficiencies are particularly troublesome for the one out of four students who does not complete a high school program.

In an effort to remedy the situation described by Parnell, school officials have placed increased emphasis on articulation programs. Articulation programs are believed to enhance student retention and promote student identification of career goals. Articulation programs serve to link the final 2 years of high school with postsecondary technical-education programs. Many such articulation efforts have been initiated during the last 5 years. For example, an earlier study by Long, Warmbrod, Faddis, and Lerner (1986) found that nearly 30 percent of the nation's 2-year colleges have developed articulation agreements with their constituent secondary institutions. Secondary-postsecondary program articulation, which has been described (Bushnell 1978) as "a planned process linking two or more educational systems within a community to help students make a smooth transition from one level of instruction to another, without experiencing delays or loss of credit," has increased quite rapidly during the past 3-4 years.

Despite the existence of a number of articulation programs, relatively little evaluation information exists regarding either the effectiveness of those programs in addressing the kinds of shortcomings noted by Parnell, their impact relative to the benefits sought by their initiators, or the most appropriate processes for implementing articulation programs. It is time in the evolution of articulation programs to fill this information void.

Study Framework

In a recent National Center for Research in Vocational Education study, a review of numerous articulation programs revealed that three distinct models or types of articulation programs are in use nationwide: advanced placement, core curriculum or tech-prep, and two-plus-two (Long, Warmbrod, Faddis, and Lerner 1986). According to this study, advanced placement shortens the amount of time needed to complete the postsecondary component of the program, tech-prep programs provide students with advanced technical skills through improved preparation, and two-plus-two programs provide a continuous 4-year curriculum that spans grades 11-14 between secondary and postsecondary institutions. They are usually competency-based and allow students to exit with a certificate of competency at the end of grade 12, 13, or 14. Of course, articulation programs may combine elements from any of the three different types. The type of program selected is determined by what the institutions want to achieve with an articulation program.

Generally, when secondary and postsecondary institutions enter into articulation agreements, they anticipate that a number of potential benefits or outcomes will result. Several of those anticipated outcomes are as follows:

- o Postsecondary institutions
  - Increased enrollments from related secondary institutions
  - Improved community public relations
  - Improved quality of incoming students
  - Enhanced student retention in associate degree programs
- o Secondary institutions
  - Reduced student attrition
  - Increased vocational enrollments due to greater attractiveness of programs to potential students and their parents
  - Reduced repetition of previous learning
  - Lessened time requirements for completing postsecondary programs

The available research clearly reflects an interest in this multiplicity of potential outcomes. For example, in one earlier

study, the Minnesota Research Coordinating Unit for Vocational Education (1975) emphasizes the savings in student time that can result when secondary and postsecondary occupational programs are properly articulated. Bender (1973) lists a number of principles for articulation while emphasizing the avoidance of unnecessary repetition of learning. Knight and Knight (1985) show concern for public relations and trust, whereas Hoerner and Austin (1980) and McKinnerney (1974) focus on outcomes of primary interest to faculty members (such as student quality and program perseverance). Bushnell (1978) notes the need to focus on people rather than on purely administrative concerns such as enrollment increases.

Winter and Fadale (1986) address the issue of excessive attrition at community colleges. DeHart (1985) argues, however, that it is inappropriate to evaluate the strength of such institutions solely on the basis of degree completion rates, since degrees measure so little of what is done by community colleges. Nevertheless, it is held by many proponents that one expected outcome of articulation programs is an enhanced rate of program completion on the part of students whose high school programs were linked to their postsecondary areas of interest.

In addition, postsecondary educators frequently complain about the low quality of recent high school graduates. The National Commission on Excellence in Education states it this way:

> More and more young people emerge from high school ready neither for college nor for work. This predicament becomes more acute as the knowledge base continues its rapid expansion, the number of traditional jobs shrinks, and new jobs demand greater sophistication and preparation. (Gardner et al. 1983)

It is also argued that articulation programs can help to improve the quality of students who enter postsecondary institutions from their articulated high schools.

Finally, maintaining enrollments in community colleges and similar postsecondary institutions is a continuing concern for those responsible. Given demographic changes and increased competition for traditional college-age youth, colleges find it necessary to market themselves more and more aggressively. One form of marketing is program articulation. Postsecondary institution personnel have assumed that articulated programs will attract more students from their constituent high schools.

Clearly, expectations with regard to the outcomes held by the different institutions and related personnel involved in articulation agreements tend to be quite variant. Therefore, any evaluation of such programs must take this multiplicity of expectations into account and incorporate appropriate evaluation processes to delineate these different expectations.

The basic framework underlying this study is presented in figure 1. Shown in figure 1 are a number of different types of variables:

- Contextual variables serve to describe the demographic and economic conditions in the service area addressed by the articulated institutions.
- Institutional characteristics are defined by variables such as size of student body, type of institution (e.g., secondary-community college, postsecondary-vocational/technical), number of programs versus number of articulated programs, per-pupil expenditures, and the like.
- Projected outcomes are of concern to both secondary and postsecondary institutions and were described in the literature presented earlier.

Objectives

The objectives of this study were--

- to describe the relative success of articulation programs in achieving their projected outcomes,
- to identify the types of contextual and institutional variables that appear to influence the attainment of the outcomes claimed for articulation programs, and
- to provide practitioners with recommendations regarding key factors to consider when implementing articulation programs or modifying such programs.

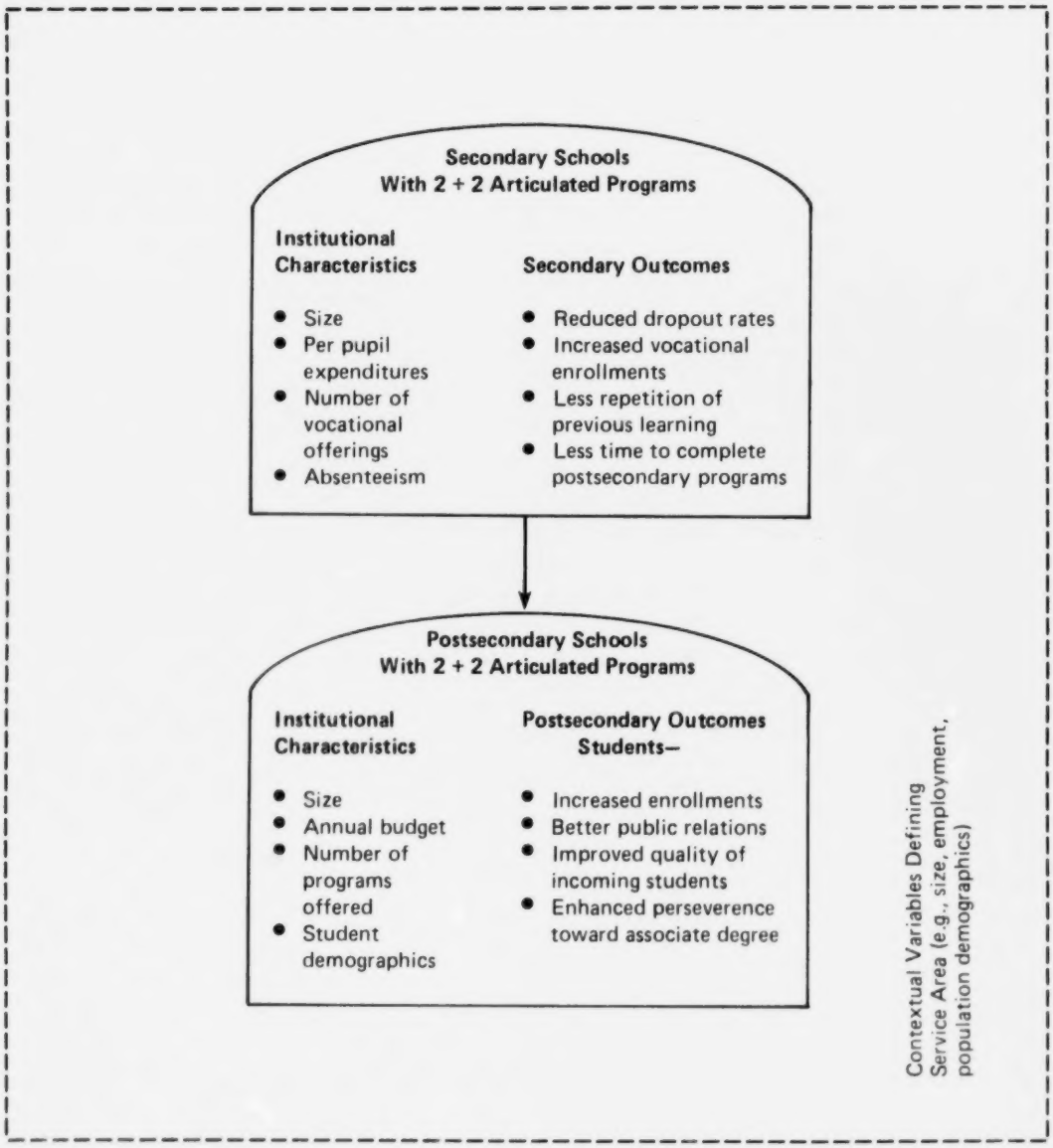

Figure 1. Framework for studying articulation programs

CHAPTER 2

STUDY PROCEDURES

This chapter describes the procedures used in conducting the study. Information is presented concerning the study approaches and the sampling plan.

In order to provide a more comprehensive set of information for analysis, the project staff used three different research approaches: literature review, on-site visits to exemplary programs, and mail questionnaires. These study approaches were chosen in order to provide a mixture of qualitative and quantitative information. The combination of qualitative information from the local site visits and the quantitative information collected via the questionnaires mailed to administrators at postsecondary and secondary schools with articulation programs plus a review of relevant literature permitted the project staff to substantiate findings in a variety of ways from more than one source. An overview of the study is shown in figure 2.

Literature Review

The first data-collection effort, a literature review, was conducted to determine previous research in the areas of the success of articulation programs in achieving their projected outcomes, to ascertain the variables that influence the attainment of the outcomes for articulation programs, and to identify previously formulated recommendations for improving articulation programs.

Program articulation is being emphasized at the postsecondary and secondary levels of vocational-technical education and considerable literature exists concerning the operation of articulation programs. However, very little of the literature base is the result of research conducted on program articulation in vocational-technical education.

Numerous references were searched to identify relevant literature: Research in Education (RIE), Abstracts of Instructional and Research Materials in Vocational Education, Current Index to Journals in Education (CIJE), Educational Resources Information Center (ERIC), and Social Sciences Retrospective of The Ohio State University's Mechanized Information Center. Reports addressing the study objectives were obtained and reviewed.

By reviewing the literature and analyzing staff experience, broad issue areas were identified by the project staff at the beginning of the study. The issue areas further extended the framework (figure 1) and served as a basis for generating the

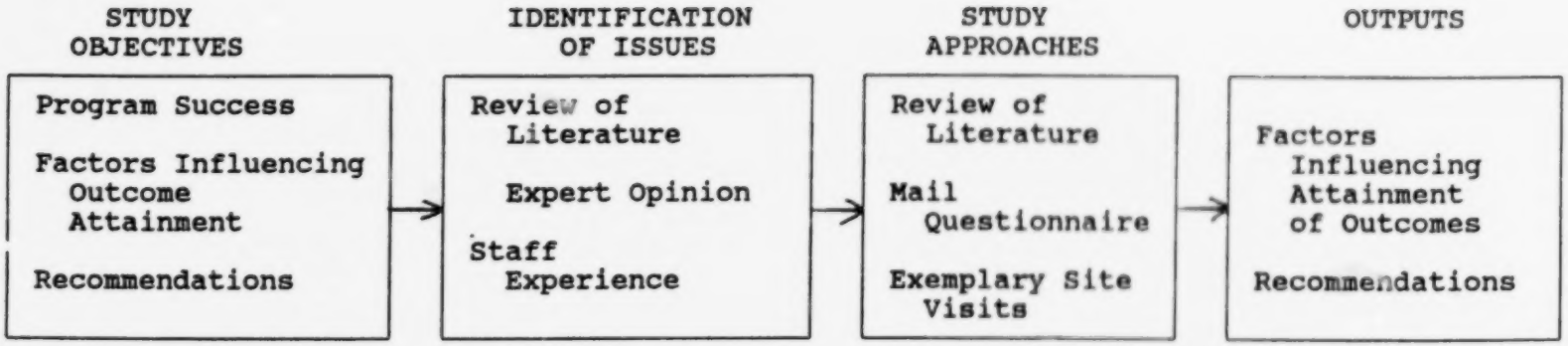

Figure 2. Overview of the study

interview questions and the items for the mail questionnaires. The issue areas are shown in exhibit 1.

EXHIBIT 1

ISSUE AREAS

1.	Type of Articulation Program
2.	Program Goals
3.	Program Outcomes
4.	Articulation Program Student Characteristics
5.	Community and Economic Characteristics
6.	School Governance, Administration, and Structure
7.	Program Staffing
8.	State Policies
9.	Program Management
10.	Program Planning
11.	Program Evaluation
12.	Stakeholders
13.	Commitment
14.	Financial Support
15.	Facilities and Equipment
16.	Curriculum
17.	Program Support Services
18.	Awareness/Promotion
19.	Institutional Characteristics

Mail Questionnaire

The second major data collection effort involved the use of mail questionnaires. The development of the questionnaires was heavily influenced by the information gained from the review of the literature and by input from staff at the National Center who were external to the project.

Sampling Plan

A project staff member contacted a member of the staff of each state governing agency or coordinating board for post-secondary education to secure a listing of the postsecondary institutions engaged in program articulation in vocational-technical education. Names of institutions were accepted only if they had a written articulation program agreement with secondary institutions in vocational-technical education areas. The agreements had to be in existence for at least 3 years.

After compiling this list of institutions, a project staff member called the postsecondary institutions to (1) confirm that they met the study criteria (2) determine their willingness to participate in the study, and (3) secure a list of the secondary institutions with whom they had articulation agreements.

One individual from each institution was requested to respond to the questionnaire. It was an institutional decision as to whom this individual was, but the project staff suggested that the respondent be the individual most knowledgeable about the vocational-technical education articulation program.

Instrument Development

Following the review of literature, the project staff developed a number of items for the questionnaires (see the appendix). Two separate but similar questionnaires were developed: one for secondary and another for postsecondary institutions. The questionnaire items were developed according to the issue areas shown in exhibit 1. A bank of items was developed for each issue area. These items were then reviewed by the project staff and National Center staff external to the project. Items were selected on the basis of their potential for making a contribution to the study objectives. Questionnaire items were also evaluated on the following criteria adapted from the work of Jahoda, Deutsch, and Clark (1951):

- Is the question necessary?
- Do the respondents have the information necessary to answer the question?

- Does the question need to be more concrete, specific, and closely related to the respondent's personal experience?
- Is the question free from misleading detail?
- Is the question likely to be objectionable?

The questionnaires were pilot tested at two sites. The pilot sites were selected because they had vocational-technical education articulation programs, but were not eligible for participation in the study because their articulation programs had been in operation for less than 3 years. Following the pilot test, the project staff refined the questionnaires.

Data Collection

The first mailing of the questionnaires to respondent groups contained a cover letter, the questionnaire, and a stamped, self-addressed return envelope. A project staff member carefully monitored the questionnaires returned and documented the receipt of each response. Two weeks after the first mailing, a second mailing was sent to nonrespondents. This mailing contained a cover letter, the questionnaire, and a stamped, self-addressed return envelope. Potential respondents not returning their questionnaire after the second mailing received a follow-up letter urging them to return their questionnaires. Of the 462 questionnaires mailed, 374 were returned and 280 were usable. A summary of the questionnaires mailed and returned is shown in table 1.

TABLE 1

QUESTIONNAIRES
MAILED AND RETURNED

	Postsecondary	Secondary	Total
Mailed	162	300	462
Returned	134	240	374
Usable	91	189	280

Most of the questionnaires returned that were not usable were from institutions that did not meet one or more of the study criteria (written agreements of 3-year duration with secondary vocational-technical programs). In most instances, the

institutions did not have an articulation program that had been in existence for at least 3 years.

The questionnaires were checked by a project staff member for inaccuracies and unrelated comments. Questionnaires were visually examined to address concerns of reliability and validity of the data. The project staff followed a number of procedures to ensure confidentiality for respondents and to ensure that no unauthorized use was made of the collected information. The information was analyzed in such a way that no individual, agency, or state could be identified.

Data Analysis

The unit of analysis was the secondary and postsecondary institutions. Percentages were calculated based on institutional responses to each questionnaire item.

Exemplary Site Data Collection and Analysis

Sampling Plan

The selection of exemplary vocational-technical education articulation program sites was a judgmental process. An attempt was made to achieve a geographical balance and to have variations in population density. Representatives of all states were asked to identify schools having exemplary articulation programs. The local sites were suggested by state-level postsecondary and secondary education personnel on the basis of the following criteria:

- Leadership and commitment from governing boards and institution administrators
- Joint institutional planning and evaluation committees for the articulated program(s)
- Joint institutional advisory committee membership for the articulated program(s)
- Shared counseling and job placement services for the articulated program(s)
- Clearly delineated institutional roles and responsibilities
- Well-developed articulated curriculum
- Reduced dropout rates (secondary and post-secondary)

- o Increased enrollments (secondary and post-secondary)
- o Improved quality of incoming students (secondary and postsecondary)
- o Enhanced perseverance toward completion of program (postsecondary)
- o Better public relations (secondary and post-secondary)
- o Students placed in meaningful employment utilizing competencies acquired in the program

Following the receipt of nominations by state-level personnel, the project staff tentatively selected the exemplary sites and contacted the site to verify existence of the program and to confirm the extent to which the site met the aforementioned criteria. Initial arrangements to visit the site were made at this time if the site sufficiently met the criteria.

Site Visits

The site visits were designed to obtain information through interviews and document and record reviews. Interviewing methods were based upon the elite (open-ended) technique developed by Dexter (1970). Within this framework, the interviewer sets the context of the interview and then allows the interviewees to respond in their own manner. During the interview, each interviewee was treated in a way that emphasized the interviewee's definition of the situation, encouraged the interviewee to structure the account of the situation, and allowed the interviewees to introduce their own notions individually of what they regarded as relevant instead of relying upon the investigator's notion of relevance.

The interviewers followed a set of guidelines for interviewing, reviewing, and observing (exhibit 2). These guidelines were an extension of the issue areas shown in exhibit 1.

Three project members visited a total of five sites. Each project staff member was at a site for an average of 2 days. During this time, approximately 9-10 interviews were conducted in addition to the time scheduled for record and document review. Interviewees typically included vocational-technical education teachers, administrators, counselors, placement specialists, students, and employers. The interviews averaged 1 hour in length. Some individuals participated in second interviews. The individuals interviewed a second time were able to provide additional information, thus ensuring the accuracy of information. Although interviews were scheduled to include representatives of the aforementioned groups, the project staff attempted to interview any other persons who seemed to possess "key

EXHIBIT 2

GUIDELINES FOR INTERVIEWING, REVIEWING, AND OBSERVING

Issue Areas and Questions	Interviewees						
	V.P. and President	Dean of Instruction	Teachers	Counselors	Students	Employer/A.C. Member	Sec. Dir/Supv. Voc. Educ.
1. Type of Articulation Program		x	x				x
2. Program Goals							
26. What are the goals?	x	x	x	x			x
27. How were the goals developed (process) and who participated in developing the goals?		x	x	x			x
3. Program Outcomes							
26. What have been the outcomes of the articulation program?	x	x					x
27. What percentage of the students who participated in the articulation program completed the high school/postsecondary program?		x	x	x	x		x
28. Do employers regard high school students who have participated in an articulation program as being a better employment risk?		x	x	x			x
29. Have you been able to meet your goals?	x	x	x				x

EXHIBIT 2

GUIDELINES FOR INTERVIEWING, REVIEWING, AND OBSERVING

Issue Areas and Questions	Interviewees						
	V.P. and President	Dean of Instruction	Teachers	Counselors	Students	Employer/A.C. Member	Sec. Dir/Supv. Voc. Educ.
4. Articulation Program Student Characteristics							
26. Average age (postsecondary)		x	x	x	x		
27. Ratio of males to females		x	x	x	x		
28. Ethnic Distribution		x	x	x	x		
29. Ability levels		x	x	x	x		
30. Participation of at-risk groups		x	x	x	x		
5. Community and Economic Characteristics							
26. What are the population characterisitcs of the area served by the articulating institutions/programs?	x	x				x	x
27. What are the major businesses/industries in the area served by by the articulating institutions?	x	x	x	x	x	x	x
28. What industries are served by the program?	x	x	x	x	x	x	x
29. How would you characterize the vitality of the major businesses/industries in the area?		x	x			x	x
30. Describe the level of cooperation among postsecondary education institutions.	x	x					

EXHIBIT 2

GUIDELINES FOR INTERVIEWING, REVIEWING, AND OBSERVING

Issue Areas and Questions	Interviewees						
	V.P. and President	Dean of Instruction	Teachers	Counselors	Students	Employer/A.C. Member	Sec. Dir/Supv. Voc. Educ.
6. School Governance, Administration, and Structure							
26. Describe the linkage/relationships of secondary/postsecondary institutions with state governing agencies.	x	x					x
27. Where are the administrative control points (formal and informal) for the articulation program (secondary and postsecondary)?	x	x	x	x	x		x
28. To whom does the person with direct administrative responsibility for the articulation program report?		x	x				x
29. Are vocational and academic programs offered in the same facilities?		x	x	x			x
30. What linkages exist between academic and vocational programs?		x	x	x			x
31. How are the community/technical colleges administered?	x	x					
32. Describe any linkages you have with elected officials and state agencies.	x	x					
7. Program Staffing							
26. What are the criteria for selection of faculty?		x	x	x			x

EXHIBIT 2

GUIDELINES FOR INTERVIEWING, REVIEWING, AND OBSERVING

Issue Areas and Questions	Interviewees						
	V.P. and President	Dean of Instruction	Teachers	Counselors	Students	Employer/A.C. Member	Sec. Dir/Supv. Voc. Educ.
27. What is the process for recruiting faculty?		x	x	x			x
28. What are the provisions for faculty training and orientation?		x	x	x			x
29. What are the arrangements for evaluation, promotion, and retention of faculty and staff?		x	x	x			x
30. Describe the opportunities for faculty to acquire knowledge of other settings.		x	x	x			X
8. State Policies							
26. What are the state policies on articulation?		x					x
27. What goals are specified or implied by state policies?		x					x
28. How are state policies executed?		x					x
29. What resources are made available at the state level?		x					x
30. What statewide training programs are available to assist local personnel in establishing and maintaining articulation programs?		x		x	x		x
31. How are state policies developed? Extent of dialogue and participation of state and local stakeholders?		x					x

EXHIBIT 2

GUIDELINES FOR INTERVIEWING, REVIEWING, AND OBSERVING

Issue Areas and Questions	Interviewees						
	V.P. and President	Dean of Instruction	Teachers	Counselors	Students	Employer/A.C. Member	Sec. Dir/Supv. Voc. Educ.
9. Program Management							
26. How are the responsibilities for articulation program coordination divided between secondary and postsecondary levels?	x	x	x	x			x
27. What administrative levels are involved in the administration of the program?	x	x	x	x			x
10. Program Planning							
26. Describe the planning process used to implement the articulation program.		x	x	x			x
27. Describe the ongoing planning processes used to plan programs.		x	x	x			x
28. In your opinion, might the processes used in this program be transferable to other articulation programs?		x	x	x			x
11. Program Evaluation							
26. What criteria are used to evaluate the program? Who developed this criteria?		x	x	x			x
27. What processes have been used to evaluate the program?		x	x	x			x

EXHIBIT 2

GUIDELINES FOR INTERVIEWING, REVIEWING, AND OBSERVING

Issue Areas and Questions	Interviewees						
	V.P. and President	Dean of Instruction	Teachers	Counselors	Students	Employer/A.C. Member	Sec. Dir/Supv. Voc. Educ.
28. What kind of data are being collected?		x	x	x			x
29. How are the data being fed back periodically to faculty and others?		x	x	x			x
30. Who is responsible for the collection and analysis of data?		x	x	x			x
31. How has the evaluation data been used?		x	x	x			x
32. Is the faculty involved in testing, data collection?		x	x	x			x
33. What are the arrangements for reporting findings?		x	x	x			x
34. Are students and other stakeholders involved in the evaluation process?		x	x	x	x		x
12. Stakeholders							
26. Who were/are the most important stakeholders in the articulation agreement? How were/are they affected/benefited?	x	x	x	x	x	x	x
27. Were/are any parties external to the education community involved in the articulation planning? Who were/are they? How were/are they involved?	x	x	x	x	x	x	x
28. How were unions involved?		x					x

EXHIBIT 2

GUIDELINES FOR INTERVIEWING, REVIEWING, AND OBSERVING

Issue Areas and Questions	Interviewees						
	V.P. and President	Dean of Instruction	Teachers	Counselors	Students	Employer/A.C. Member	Sec. Dir/Supv. Voc. Educ.
13. Commitment							
26. How would you characterize the degree of commitment to articulation in both secondary and postsecondary divisions at the level of state administration, institutional administration, and faculty?	x	x	x	x			x
27. Whose commitment (office/individual) was most critical to the success of the articulation effort?	x	x	x	x			x
28. Have the levels of commitment changed over time? Who/how?	x	x	x	x			x
14. Financial Support							
26. Are high school students counted as FTE at the high school or postsecondary school when they are dually enrolled?		x					x
27. What is the source of funding for program coordinators?		x					x
28. What is the source of funding of the program?		x					x
15. Facilities and Equipment							
26. Are facilities and equipment adequate?		x	x	x	x		x
27. How are facilities and equipment shared?		x	x	x	x		x

EXHIBIT 2

GUIDELINES FOR INTERVIEWING, REVIEWING, AND OBSERVING

Issue Areas and Questions	Interviewees						
	V.P. and President	Dean of Instruction	Teachers	Counselors	Students	Employer/A.C. Member	Sec. Dir/Supv. Voc. Educ.
16. Curriculum							
26. Describe the process for developing the curriculum.		x	x	x			x
27. Describe the provisions for interdisciplinary study.	x	x	x	x	x		x
28. Does it feature individualized instruction?		x	x	x	x		x
29. Describe the opportunities for independent study.			x	x	x		x
30. What kind of remediation services are available?			x	x	x		x
31. How is educational technology utilized in the program?		x	x		x		x
32. How does the program allow for self-pacing?		x	x		x		x
33. Is the curriculum competency based?		x	x				x

EXHIBIT 2

GUIDELINES FOR INTERVIEWING, REVIEWING, AND OBSERVING

Issue Areas and Questions	Interviewees						
	V.P. and President	Dean of Instruction	Teachers	Counselors	Students	Employer/A.C. Member	Sec. Dir/Supv. Voc. Educ.
17. Program Support Services							
26. How do students decide whether or not to participate in the articulation program? (Students: Why did you decide to enroll in the program?)		x	x	x	x		x
27. If a student has difficulty in a postsecondary level course or with a related subject, how does the student obtain help?		x	x	x	x		x
28. What is the transportation arrangement?		x	x	x	x		x
29. At what time of day are the postsecondary courses taken?		x	x				
30. How does the articulation program use the resource center?		x	x	x	x		x
31. How are support services at participating institutions coordinated?		x	x	x	x		x
32. Are remediation services available prior to or parallel with articulated courses?		x	x		x		x

EXHIBIT 2

GUIDELINES FOR INTERVIEWING, REVIEWING, AND OBSERVING

Issue Areas and Questions	Interviewees						
	V.P. and President	Dean of Instruction	Teachers	Counselors	Students	Employer/A.C. Member	Sec. Dir/Supv. Voc. Educ.
18. Awareness/Promotion							
28. What strategies do you use to make the public, students, and staff aware of the articulation program?	x	x	x	x	x	x	x
27. How successful have the strategies been and how have you measured success (criteria)?		x	x				x
28. Who is responsible and who is involved in awareness/promotion activities?		x	x	x	x		x
29. Target groups?		x	x	x			x
30. Who pays for it? Why?		x					x
19. Institutional Characteristics							
16. Faculty		x					x
27. Support Services		x					x
28. Students		x					x
29. Programs		x					x
30. Facilities and Equipment		x					x

information" about the factors likely to contribute to the institution achieving its articulation program goals.

Data Analysis Procedures

After each day's interviews and record and document reviews, the project staff member at the site was able to begin the data analysis by initially determining emerging patterns and themes. This early organization of the data permitted the project staff to probe deeper into those areas considered to be of major significance.

Patton's (1980) definition of analysis and interpretation is helpful in understanding how the information obtained from the local sites was analyzed. He writes, "There are no formal, universal rules to follow in analyzing, interpreting and evaluating qualitative data" (p. 286). "Analysis is the process of bringing order to the data, organizing what is there into patterns, categories, and basic descriptive units. Interpretation involves attaching meaning and significance to the analysis, explaining descriptive patterns, and looking for relationships and linkages among descriptive dimensions" (p. 238). The project staff identified patterns that appeared to be present in the data. Those patterns represented the perspective of the project staff members based on their understanding of the data collected. As with any data, the readers will judge these interpretations in view of their own understanding of secondary and postsecondary vocational-technical education articulation programs and the environment in which such programs operate. The analysis of the information obtained from the local sites focused on the study objectives and the components of the study framework shown in figure 1. The information from the local sites was reviewed and analyzed by the project staff and organized according to major issue areas shown in exhibit 1. Reviewing the content of the conceptual framework and the themes that emerged from the data collected indicated considerable congruency of substantive content.

The first step in the data analysis was the coding of the information. As the coding continued, it became apparent that the initial listing of thematic areas needed to be refined. The thematic areas were combined, altered, or defined in slightly different ways to reflect the data. As project staff worked with the data, a continuing search for recurring regularities was conducted. These regularities merged into patterns that could be assigned to homogeneous thematic areas.

Several staff members worked on the data analysis. This provided opportunities for diversity of opinions to surface. The comparison and discussion of these differences frequently led to important insights about the characteristics of effective vocational-technical education articulation programs. This was a time-consuming and intensive process, accurately described by

Patton (1980) as a process of "constantly moving back and forth between the phenomenon of the program and our abstractions of that program, between the descriptions of what has occurred and our analysis of those descriptions, between complexity of reality and our simplifications of those complexities, between the circularities and inter-dependence of human activity and our need for linear, ordered statements of cause effect" (p. 268). This frequently resulted in suggestions of other possible findings and determinations of whether sufficient data existed to support the new suggestions. In addition, the data from the interviews were verified by the checks and balances that resulted from the combination of qualitative and quantitative data.

In this study, the project staff was interested in patterns and themes that emerged across all sites. Therefore, careful consideration was given to the unique characteristics of each site and a determination was made concerning applicability to all sites.

CHAPTER 3

FINDINGS

This chapter presents information collected from the study sites--interviews, document and record reviews, and observations; the mail survey of secondary and postsecondary institutions with vocational-technical education articulation programs; and the review of literature regarding articulation programs.

Success in Achieving Goals

Program Goals

Articulation in its most generic sense is defined as "jointing or being jointed" (Webster's Ninth New Collegiate Dictionary 1984). Secondary to postsecondary vocational-technical education articulation programs are a response to the recognition that the interests of students, educational institutions, business, and industry cannot be served effectively through independent programming. A review of the literature and program documents, then, shows that, although the programs have as an instrumental goal joint programming to eliminate duplication, primary goals most frequently listed are to--

- o save students time and money,
- o encourage student development through improved programming,
- o facilitate student transition from one level to another,
- o attract better students,
- o increase the time available for vocational-technical training programs,
- o allow for an orderly progression or continuum of program instruction from secondary to postsecondary grades (11-14), and
- o increase the number and quality of graduates available for business/industry.

In the mail survey, program goals were listed as follows (see table 2):

- o Increased service to students
- o Increased service to employers

- Program improvement/educational excellence
- Student retention
- Reduction of program costs
- Other

Survey respondents were asked to rate each item's level of importance as an independent goal of their articulation program (i.e., conceivably, all goals could have been rated equally important).

TABLE 2

LEVEL OF IMPORTANCE OF ARTICULATION PROGRAM GOALS

Articulation Program Goals	Type of Site	Number of Respondents	Percent of Responses			
			High	Medium	Low	None
Increased student services	Postsec.	71	91.5	8.5	0	0
	Sec.	180	89.4	10.6	0	0
Increased employer services	Postsec.	70	24.3	45.7	25.7	4.3
	Sec.	177	24.3	49.2	22.6	4.0
Program improvement	Postsec.	68	69.1	26.5	4.4	0
	Sec.	179	59.2	35.2	5.6	0
Student retention	Postsec.	70	40.0	42.9	12.9	4.3
	Sec.	180	38.9	42.8	12.2	6.1
Program cost reduction	Postsec.	71	28.2	32.4	28.2	11.3
	Sec.	179	24.6	34.1	28.5	12.8
Other	Postsec.	9	100.0	0	0	0
	Sec.	13	69.2	23.1	7.7	0

Secondary and postsecondary responses were strikingly similar. "Student services" were regarded as highly important by about 90 percent of secondary and postsecondary schools whereas approximately 10 percent rated them of medium importance. "Program improvement" was rated as a highly important goal by about 70 percent of postsecondary schools and 60 percent of secondary schools, whereas approximately one-fourth of postsecondary and over one-third of secondary schools rated it of medium importance.

Respondents split almost evenly in assigning "student retention" as a goal of high and medium importance (40 percent and 43 percent, respectively). "Increased service to employers" assumes medium importance as a goal to almost half of the

respondents; of the remaining one-half, one-fourth rated it highly important, the other one-fourth rated it of low importance.

Although more efficient use of resources is widely recognized as one of the benefits of articulation programs (Long, Warmbrod, Faddis, and Lerner 1986), only about one-fourth of the responding schools regarded program cost reduction as a highly important goal. Approximately one-third of the respondents regarded it as of medium importance, over one-fourth felt it was of low importance, and approximately 12 percent of schools said it was not a goal.

Summary. Increased student services and program improvement were viewed as the most important goals for vocational-technical education articulation programs. Student retention, program cost reduction, and increased service to employers also received considerable support as important goals.

Program Types

Although articulation programs vary widely in operational details, primary program goals can be used to categorize them into two broad types: (1) time-shortened models, and (2) advanced curriculum models. Advanced curriculum models can be subdivided into (a) technology education preparation (tech prep) and (b) two-plus-two models (Long, Warmbrod, Faddis, and Lerner 1986). The movement from time-shortened to tech-prep to two-plus-two models generally represents a progression in the degree of secondary-postsecondary joint programming.

Time-shortened models (also referred to as advanced placement or conventional models) have as their primary objective saving the student time and money required to complete an associate degree by eliminating unnecessary course duplication in advancing from the secondary to the postsecondary level. Usually, upon entering the postsecondary program, students are given credit or advanced standing for postsecondary requirements completed before high school graduation.

Advanced curriculum models are also designed to eliminate course duplication through joint programming, but the primary objective is to make room for additional courses required in a more advanced curriculum. The advanced program model represents a general response to the accelerating skills requirements of advanced technologies (Bluestone and Harbrecht 1987). The tech-prep (or core curriculum) models provide advanced, flexible core curricula (e.g., math, technical literacy, science, computer literacy) at the secondary level as prerequisites to advanced postsecondary technical programs.

The two-plus-two models represent more complete joint programming. The articulating institutions come together to

design a continuous 4-year curriculum spanning grades 11-14--2 years secondary and 2 postsecondary. Programs often have joint facilities, instruction, advisory committees, and a single program coordinator. The curricula are normally competency-based, allowing students to exit the program with a certificate of competency at the end of grades 12, 13, or 14.

As one would expect, the overwhelming majority of survey respondents (71 percent of postsecondary and 65 percent of secondary) identified their articulation programs as time-shortened models (see table 3). This is consistent with the strong focus on student services as a program goal. "Tech prep" models were reported to comprise 10 percent each of secondary and postsecondary articulation programs. More surprising, however, was the high percentage of two-plus-two programs reported (19 percent of postsecondary and 25 percent of secondary programs).

TABLE 3

ARTICULATION PROGRAM TYPES

Program Types	Postsecondary		Secondary	
	n	%	n	%
Time-Shortened	50	71.4	117	65.4
Tech Prep	7	10.0	18	10.1
Two-plus-Two	13	18.6	44	24.6

There is reason to believe that an even greater percentage of the articulation programs are time-shortened models and that fewer programs are two-plus-two programs than reported. First, there is a strong tendency to use the term two-plus-two inter-changeably with articulation (Long, Warmbrod, Faddis, and Lerner 1986). Second, comments gathered from the site visits and during telephone conversations with survey participants would indicate that a number of schools have established time-shortened programs and are in the process of planning two-plus-two programs. Third, relatively few programs report features associated with two-plus-two programs (e.g., joint instruction, joint advisory committees, single articulation coordinator, and so forth. A clear trend, however, is that, as secondary and postsecondary institutions gain experience with time-shortened programs, and as advancing technologies call for increased skill demands, articulation programs are moving toward more advanced program models.

Summary. The basic articulation program types are time-shortened, tech prep, and two-plus-two. Most of the vocational-technical education articulation programs appear to be initiated

as time-shortened programs. Some of these programs then move to the more complex two-plus-two models.

Program Outcomes

Under ideal conditions, articulation programs would be expected to produce a number of benefits over traditional, independent secondary or postsecondary programs. For the students, time-shortened or advanced-placement programs would allow earlier completion (Parsons 1980). Exit-level competencies would prepare the student for the next higher level without course repetition; credit earned at one level would be accepted at another, saving the students time, effort, and money (Knight 1983). The career-cluster approach of most tech-prep programs would allow students to develop broad-based competencies rather than be limited by the shorter-term, narrower training of traditional programs. Closely articulated 4-year (two-plus-two) programs would provide more room for electives than the current 2-year college program, thus providing a richer educational experience for students not pursuing a baccalaureate degree (Parnell 1984).

For the educational institutions, enrollments would increase. Many students would be drawn to the articulated career programs because of perceived opportunities. There would be greater student retention at the high school level, and they would find advantages in continuing at the college level (Parsons 1980). Interinstitutional relationships would be enhanced because instructional expectations between secondary vocational and community college instructors would be clarified. Fuller, richer, and more efficient use of laboratories, equipment, instructional materials, and personnel would be realized (Suydam 1983).

Businesses would receive employees with superior training and would, as a result, seek to fill the broad range of mid-level occupations with program completers. Because of employer demand, students would seek the degree and view it as a preferred career development route (Parnell 1984).

In reality, however, many factors can intervene to dampen ideal program benefits. Some students face practical problems or make choices that preclude taking advantage of time-shortened programs, such as dividing time between work and school, taking reduced course loads in the beginning, taking more electives or more courses in the major, or working on dual degrees. Some programs present structural barriers. In nursing, for example, it is impossible for students to complete requirements early (Parsons 1980). When students complete programs before 18 years of age, companies sometimes avoid hiring them because insurance costs are prohibitive.

Problems in program planning and structuring may also affect outcomes. Layers of red tape can make articulation programs

difficult to operate or dilute attractiveness of benefits to students. Moreover, complex programs can be difficult to explain and, therefore, to promote. Some programs are poorly coordinated because no person has been designated for that responsibility.

For schools accustomed to operating independently, working cooperatively can mean a difficult adjustment. For each institution, articulation is likely to mean increased complexity in program planning, development, and implementation. Also, the initial start-up costs in dollars, personnel time, and effort may be viewed as a disadvantage (Suydam 1983) and thus lower administrative and/or staff enthusiasm.

Even for a well-planned and well-coordinated articulation program, the amount of time it has been in operation will be a big factor in outcomes. Relatively few vocational-technical education articulation programs have been in operation a sufficiently long time to work out program difficulties and produce maximum results.

Normal start-up problems are, of course, exacerbated by such factors as traditional secondary-postsecondary turf battles (e.g., competition over full-time teaching equivalents) and concern for autonomy (Knight 1983). The problems are especially prevalent in situations where cooperation is mandated at the state level without commitment on the part of local administrators and staff.

Survey respondents were asked to rate their success (from "high" to "none") in achieving program goals previously listed (see table 4). The responses show that relatively few programs reported high success in achieving program goals. In fact, on none of the goals listed did a majority of schools report high in achievement, but, for several items, the majority of schools reported moderate success. Postsecondary schools were prone to report slightly higher success in goal achievement than secondary schools, whereas secondary schools were, for the most part, more prone than postsecondary schools to list "no success."

On the item "increased service to students"--listed as the most important goal by both postsecondary and secondary schools--approximately 47 percent of postsecondary schools felt they achieved a high level of success. Only 38 percent of secondary schools felt the same way, but over half (53 percent) reported moderate success.

On "program improvement," which was rated the second most important goal (see table 4), only about 30 percent of secondary and postsecondary respondents reported high program success, whereas over 50 percent each reported moderate success. Approximately 20 percent of postsecondary schools and 14 percent of secondary schools reported low success, and about 4 percent of secondary schools reported no success.

TABLE 4

PERCEIVED SUCCESS IN ARTICULATION PROGRAM GOAL ACHIEVEMENT

Articulation Program Goals	Type of Site	Number of Respondents	Percent of Responses			
			High	Medium	Low	None
Increased student services	Postsec.	71	46.5	42.3	11.3	0
	Sec.	177	38.4	52.5	7.9	1.1
Increased employer services	Postsec.	66	15.2	45.5	27.3	12.1
	Sec.	174	11.5	52.9	27.0	8.6
Program improvement	Postsec.	69	29.0	50.7	20.3	0
	Sec.	172	29.7	52.3	14.0	4.1
Student retention	Postsec.	69	15.9	58.0	23.2	2.9
	Sec.	172	13.4	55.8	20.9	9.9
Program cost reduction	Postsec.	64	21.9	28.1	35.9	14.1
	Sec.	169	14.2	38.5	30.2	17.2
Other	Postsec.	9	77.8	11.1	11.1	0
	Sec.	9	55.6	33.3	11.1	0

In the areas of both "increased service to employers" and "student retention," close to half of postsecondary and secondary respondents reported moderate success in goal achievement. On both items, however, a higher percentage of schools reported low success. On both items, the schools reporting no success (except for student retention in postsecondary schools) are approaching or slightly over 10 percent.

"Cost reduction" shows a slightly more even distribution across the "no success" to "high success" continuum for both secondary and postsecondary institutions. However, more postsecondary schools reported low success (36 percent) in achieving this goal than for any other goal, and more secondary schools reported moderate success (39 percent) than for any other goal. Also, more schools reported achieving no success in cost reduction than for on any other goal. Also, slightly more secondary schools report no success (17 percent) than report high success (14 percent) for this goal.

The relatively low success in cost reduction is in keeping with its low priority as a goal. It is perhaps also reflective of the fact that most articulation programs are in the early stages of development where costs are still running high, and increased services associated with the program will outweigh savings from reducing program duplication.

The overall ability to analyze outcomes, however, is limited. First, few programs keep sufficient records or conduct adequate follow-up or evaluations to support an in-depth analysis of outcomes. Second, some benefits resulting from joint planning between secondary and postsecondary schools are difficult to measure objectively.

Summary. The inadequacy of evaluations makes it difficult to assess the attainment of program goals. However, most of the study respondents expressed success in achieving program improvement and increased service to students. Increased service to employers and student retention were reported as moderately successful outcomes. There is great variation among schools in reporting success with cost reduction as an outcome of program articulation in vocational-technical education.

Factors Influencing Attainment of Goals

Context

Community and economic characteristics. The five sites visited were very dissimilar. For example, although electronics was the major industry at two sites, the three other sites supported different industries: tourism, agriculture, and the health industry.

Overall, the sites are in good economic condition except for one, which has a high youth unemployment problem, especially among Black youth. Two sites are predominantly middle class and socially stable. One of the sites is also socially stable, but its residents make up a more affluent, "upper class" area; in contrast, a fourth site is stable but populated with blue-collar workers and retirees. One site is in poor condition economically and is the most unstable socially of the five sites visited.

Two sites have minority populations: one site's minorities are predominantly Hispanic, and the other site's minorities include Black, Hispanic, and Asian populations. The three remaining sites have few minorities.

School characteristics. The enrollment of the postsecondary schools visited ranged from 350 to over 70,000; they were all public vocational schools, trade or technical institutions, or junior or community colleges. No 4-year institutions were visited. This is comparable to the universe of postsecondary institutions surveyed, of which 98.6 percent were public, 2-year institutions and only 1.4 percent were 4-year institutions offering vocational-technical associate degrees.

The high schools visited ranged in enrollment from 1,200 to slightly less than 2,000. At three sites, the secondary schools

were comprehensive high schools; at a fourth site, the secondary school was a vocational specialty school that drew students from the entire district. The fifth site presented a unique situation: the 2-year postsecondary school serves as the designated secondary area vocational school. Of the secondary schools surveyed, 33 percent reported being public joint (area) vocational schools, and 66 percent reported being comprehensive high schools (1 percent did not respond).

The articulation program areas examined at the five sites included electronics, auto mechanics, business, and health. These 4 areas are included among the 10 most frequently reported articulation program areas as reported by secondary and postsecondary survey respondents (see table 5). Data processing and secretarial programs were indicated by questionnaire respondents as being the most popular articulation program offerings.

When queried regarding the awarding of credit, 83 percent of postsecondary and 82 percent of secondary institutions surveyed reported that students are awarded credit in the postsecondary program for skills and knowledge competencies gained in the secondary education component of the articulated program. This was also true of three of the five exemplary sites visited.

When asked if students are awarded advanced standing in the postsecondary program for skills and knowledge competencies gained in the secondary education component of the articulated program, 89 percent of the postsecondary and 82 percent of the secondary institutions report in the affirmative. This is also true of three of the exemplary sites.

When asked if students enrolled in the secondary component of the articulated program are simultaneously enrolled as post-secondary students, 62 percent of the postsecondary and 77 percent of the secondary institutions surveyed said no. Coenrollment did not occur at three sites either. In some states, state law forbids coenrollments. One of the sites is located in such a state.

Forty-eight percent of the postsecondary institutions that responded to the survey required testing to determine if the student(s) had, indeed, acquired the necessary skills and knowledge competencies in the secondary component of the program. At one of the exemplary sites, the instructor's signature and the student's grade were sufficient validation that skills and knowledge had been attained; at another site, the postsecondary instructors were desirous of implementing a competency test.

Student characteristics. The characteristics of students who are involved in articulation programs are varied. Some of the sites visited reported that this group of students was not at risk, whereas others reported that up to 60 percent of the articulation-program students are at risk. Minorities were found

TABLE 5

MOST FREQUENTLY REPORTED
ARTICULATION PROGRAMS

SECONDARY	POSTSECONDARY
Secretarial/word and information processing	Data processing
Mechanical repair including automotive, diesel, aircraft, and related	Electronics technology (general)
Data processing	Secretarial/word and information processing
Construction trades, including electrical	Drafting and design technology
Precision metal work, including machining fabrication, welding, sheet metal, and related	Mechanical repair, including automotive, diesel, aircraft, and related
Drafting and design technology	Precision metal work, including machining, fabrication, welding, sheet metal, and related
Clerical	Other technical/technology education programs
Accounting	Accounting
Food service, culinary arts, baking, and related	Marketing including fashion merchandising, advertising, and respiratory therapy
Marketing (fashion merchandising, advertising, etc.)	

in all the articulation programs at the sites visited. The ratio of male to female varied in the visited programs, ranging from 6:1 to 2:25. Articulation program students were described variously as being hard working, bright, capable, and ranging in intelligence from very high to very low. At only one of the exemplary sites, however, were the students selectively screened due to the technical nature of the program. Figures 3 and 4 present survey results regarding the participation of minority and at-risk students in articulation programs.

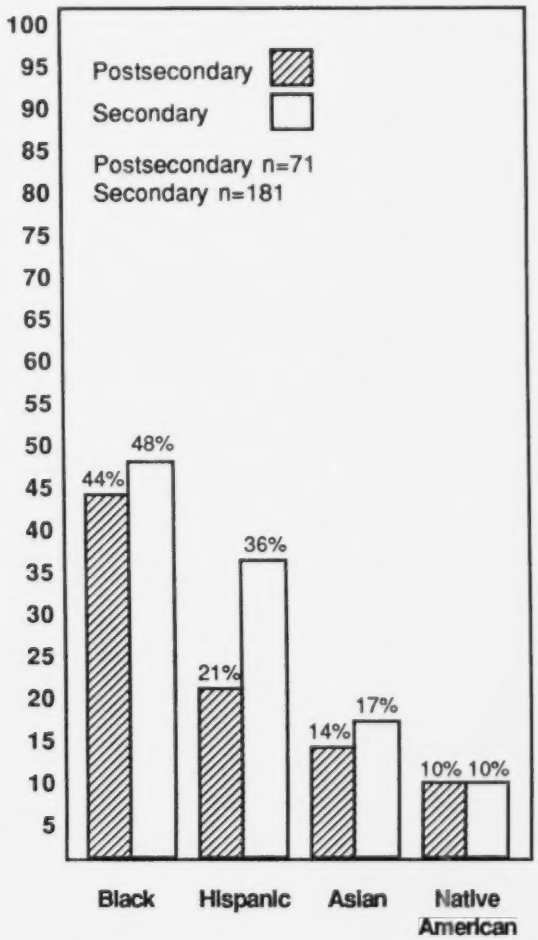

Figure 3. Percentage of postsecondary and secondary institutions with minority students enrolled in articulation programs.

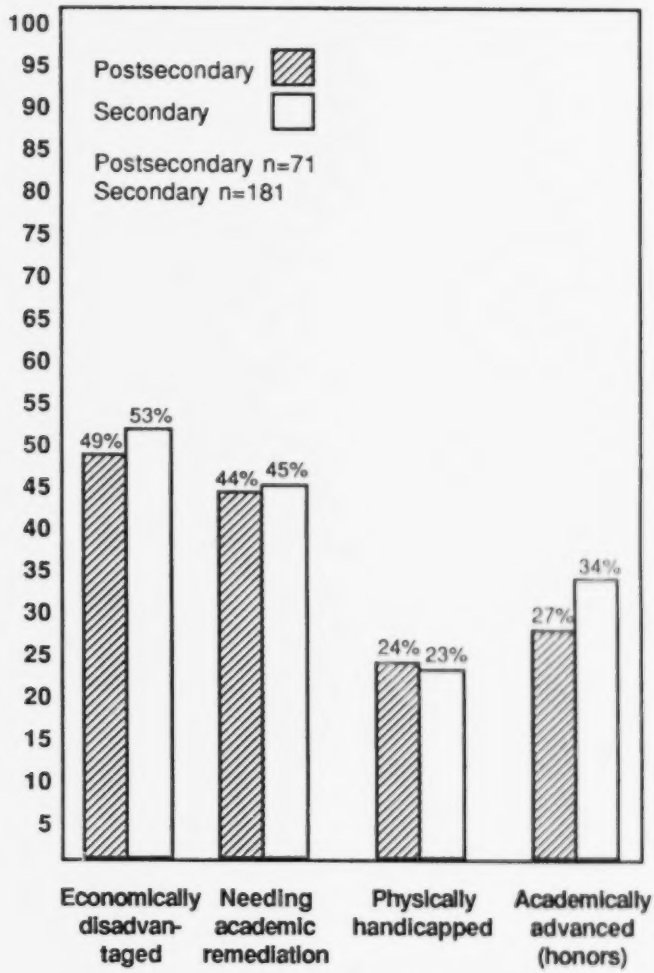

Figure 4. Percentage of postsecondary and secondary institutions with special needs students enrolled in articulation programs.

The major points of interest are that fewer Hispanic students attend the postsecondary portion of the articulation program than the secondary portion and that somewhat fewer economically and academically disadvantaged articulation students attend post-secondary than attend secondary.

Summary. The major points that describe the factors that influence the attainment of goals are as follows:

- o No single industry is common between sites.
- o Generally, the areas in which the sites are located are in good economic condition.

- The site areas are, generally, socially stable.
- Presence of minorities varies considerably.
- School size of sites varies for both secondary and postsecondary institutions.
- Postsecondary schools are 2-year rather than 4-year institutions.
- The secondary schools are predominantly comprehensive high schools.
- The frequency with which program areas were reported as being part of an articulation agreement varies between secondary and postsecondary (see table 4).
- In general, students receive credit and advanced standing in the postsecondary program for skills and knowledge competencies gained in the secondary education component of the articulation program.
- Coenrollment generally does not occur.
- Nearly one-half of the postsecondary institutions test articulation students to determine if the required skills and knowledge competencies have been attained.
- Minority and special needs students are participating in articulation programs at both the secondary and postsecondary levels.

Policy and Management

State policies. A number of forces confronting states (e.g., declining enrollments, uncertain funding, a wide variety of funding mechanisms, escalating equipment costs, an increasing diversity of student populations, and accelerating change in the job market) are making it increasingly costly for states to operate education programs with the traditional secondary-postsecondary coordination. Forms of state involvement in secondary-postsecondary articulation cover a wide range, including--

- mandating articulation agreements,
- persuading through stipulations in funding criteria,
- offering incentives through availability of grants for pilot projects,

- o sponsoring statewide studies and workshops on articulation methods, and

- o providing state sanction, support, or formalization to articulation processes initiated at the local level.

Initial state involvement with education articulation was concerned with easing the access of high school students to universities. Such efforts began with the exploration of alternative means for awarding college credits for courses taken in high school (e.g., through advanced placement or credit by examination using tests of subject matter proficiency, such as the College Level Examination Program). Currently, a trend is growing toward awarding advanced placement credit through joint enrollment programs.

Facilitating interinstitutional credit transfer without imposing inflexibility in course content has also been examined at the state level. The efforts expanded among secondary-postsecondary vocational-technical institutions to include such issues as competency-based articulation and methods of assessing performance (Florida Institute of Education 1986).

Some states have examined the feasibility of sharing resources such as faculty, facilities, and equipment. Increasing efforts in this area are spurred by rapidly rising costs in vocational-technical education.

A growing number of states now are starting to build on earlier articulation experiences to foster program articulation, such as New York's establishment of tech-prep programs (Bluestone and Harbrecht 1986) and the Oregon Department of Education's (1987) statewide two-plus-two initiative.

Although evidence exists of stepped up activity at the state level to advance articulation programming, states must be concerned about appropriate degrees and methods of involvement. Several studies (Florida Institute of Education 1986; Knight 1983; Long, Warmbrod, Faddis, and Lerner 1986) point out that mandated cooperation is likely to produce limited results and that local secondary and postsecondary administrators and faculty must see the mutual benefits in cooperation for articulation efforts to yield effective results in the long term. The studies imply that the state can focus effectively on such efforts as clearing bureaucratic hurdles to articulation, sponsoring research to investigate and workshops to inform individuals about articulation practices, and providing long term continuity in financial support.

Four survey questions were used to determine features and perceptions of state involvement. The first was designed to determine if articulation programs operating under two or more state authorities shared common definitions and philosophies about

articulation. The second and third were designed to determine whether or not respondents perceived vocational-technical education articulation to be a high departmental priority in state secondary (i.e., K-12) and postsecondary education offices. The fourth sought to determine whether or not the state provided incentives for articulation. If the items were features, respondents were asked to give their perceptions of the items' importance to local articulation program success (see table 6).

Close to three-fourths of all schools indicated that they operate under two or more state authorities but share common definitions and philosophies about articulation. At least 27 percent of postsecondary schools but only 16 percent of secondary schools regarded these common perspectives at the state level as highly important. Twenty-four percent of postsecondary schools and 22 percent of secondary schools regarded it to be a moderately important feature to program success. Eight percent each, secondary and postsecondary, assigned it low importance. Interestingly, 22 percent of secondary respondents had no opinion or knowledge. This response might indicate that, whereas most respondents feel common state-level perspectives are important, a sizeable number of secondary school actors have not given the state role or state philosophies regarding articulation much emphasis.

On the question of state-level involvement, taking the first two items together, all but a fraction of survey respondents felt that both secondary and postsecondary state officials viewed vocational-technical articulation as a high departmental priority. Respondents were, however, fairly evenly divided (ranging from slightly over 30 to around 40 percent each) on whether state officials' views of articulation as a high departmental priority was of "high" or "medium" importance to local program success. Also, on the two items combined, 11 percent to 17 percent regarded the attachment of state priority to articulation as having little bearing on local program success.

On the question of state-level incentives, around 25 percent of secondary schools and 17 percent of postsecondary schools state that incentives from the state are not a program feature. Moreover, responses on this item indicate that, by and large, fewer respondents feel that state-level incentives are important to local program success than those who feel attachment of priority by state officials is important. Postsecondary respondents, however, attached more importance to incentives than did secondary respondents. Respondents indicated that local commitment and local resources are regarded as a more important factor in local program success.

Stakeholder involvement. The individuals interviewed at the five sites saw, in general, only positive outcomes for all who are involved in articulation programs. Although the general consensus was that students have the most to gain from the articulation

TABLE 6

STATE-LEVEL COMMITMENT TO ARTICULATION AS PERCEIVED BY SECONDARY AND POSTSECONDARY RESPONDENTS

Criteria	Type of Site	Number of Respondents	Percent of Responses					
			High Importance	Medium Importance	Low Importance	No Importance	Not a Feature	No Opinion or Knowledge
State department of education officials (K-12) view vocational technical education articulation as a high department priority.	Postsec.	70	39.1	31.9	13.0	1.4	4.3	10.1
	Sec.	177	33.3	37.9	14.1	3.4	2.8	8.5
State postsecondary education officials view vocational-technical articulation as a high departmental priority	Postsec.	70	42.9	34.3	11.4	1.1	1.1	9.1
	Sec.	176	31.8	40.3	16.5	4.3	7.1	9.1
State-level incentives are provided for secondary-postsecondary articulation of vocational-technical education programs.	Postsec.	70	27.1	35.7	10.0	2.9	17.1	7.1
	Sec.	177	12.4	19.2	19.8	6.2	26.6	15.8
The articulation program operates under a single state authority (state board, state administering agency, or common definitions and philosophy.	Postsec.	68	11.8	13.2	7.4	5.9	58.8	2.9
	Sec.	169	14.8	14.8	8.9	3.0	40.8	17.8
The articulation program operates under two (2) or more state authorities who share a common definition and philosphy about articulation.	Postsec.	66	27.3	24.2	7.6	4.5	28.8	7.6
	Sec.	170	15.9	21.2	8.2	4.7	27.6	22.4

effort, everyone, from the schools to taxpayers, according to our interviews, stands to benefit from articulation agreements.

Students were felt to be the primary beneficiaries of articulation efforts, due to the potential savings of time and money. Articulation was also felt to motivate students not only to perform better in high school, but to continue their education, thereby increasing their chances for obtaining a higher-paying job. Articulation programs are also believed to attract students into job areas where the opportunities for employment are greater, to smooth the transition between high school and postsecondary schools, and to provide students with a better understanding of the subject matter.

Secondary schools at the five sites were perceived as benefitting from articulation agreements in a number of ways. One of the most frequently mentioned was that, because articulation provides a very visible link with and encouragement to obtain higher education, the image and prestige of the vocational program and the secondary school are enhanced. This, in turn, helps recruit high-quality students into the vocational program. Other benefits were also mentioned. The review of curriculum necessitated by the coordination with postsecondary programs results in a revised, updated program, just as the professional interaction brought about from working on the articulation program enriches instruction. Equipment costs at the secondary level can be lowered if the two institutions decide to share equipment and facilities. Other postsecondary resources, such as audiovisuals, speakers, workshops, and tours, also can be accessed by the secondary component of the program. Secondary schools also benefit from having students who are motivated to be more serious about their education because they are better able to see the value and use of their classes.

As is true with secondary schools, the postsecondary institutions that served as sites in this study are perceived to benefit from increased enrollment, in general, and, further, this type of enrollment helps to balance out the natural attrition that occurs between the first and second years of a postsecondary program. Better-quality students are believed to enroll as the result of articulation programs and more uniform groupings of student skill levels are felt to be facilitated. As with the secondary schools, the postsecondary schools revise and update their curriculum when coordinating articulation programs. The free publicity that a postsecondary institution can receive as a result of articulation efforts is felt to be another positive benefit. Finally, articulation programs are thought to encourage students to take higher-level courses and, once the program is completed, to take continuing education and enrichment courses.

Business and industry are obvious recipients of benefits of articulation agreements, as they are the end user of the "product." Several interviewers commented that business and industry have significant input into articulation programs and are

able to influence, indirectly, the number of students who will enroll and subsequently graduate from programs in specific areas by encouraging and supporting articulation efforts.

The image of secondary vocational education teachers is enhanced by their commitment to continued education for their students. The articulation effort is also believed to increase teachers' professional recognition through their participation in the decision-making and curriculum-development process.

State education agencies also may benefit from articulation. At one of the sites visited as part of this study, an interviewee stated the belief that articulation programs help diffuse allegations of duplication of effort in states where two different agencies administer education, thus helping to perpetuate the secondary and postsecondary systems. Personnel at state agencies are also felt to believe that articulation agreements help keep teachers updated and that they facilitate the implementation of competency-based education.

Even taxpayers are perceived as benefitting from articulation. A reduced duplication of effort results in more cost-effective programs, which translates into either lower taxes or more/better programs for the same amount of money. Increased education generally means a higher wage, which, in turn, means a healthier economy.

Only two negative comments were heard during site visit interviews. A postsecondary instructor voiced the concern that the curriculum was not being adequately covered at the secondary level; thus, the students would not possess the necessary competencies for the more advanced courses they would be required to take at the postsecondary institution. It should be noted that this was a case where a group of stakeholders felt they had not been sufficiently involved in the planning process. The process had gone on around them, based on textbook/laboratory manual adoption. At the same site, another individual was concerned that the math sequence was no longer synchronized with the requirements of the technical courses.

Four items on the questionnaires dealt with some of the benefits that secondary and postsecondary personnel might perceive as resulting from the articulation agreement process. Respondents were asked to mark if they strongly agreed, agreed, disagreed, or strongly disagreed with the statements that appear in table 7. The secondary and postsecondary responses were very close on three of the four items. The item of wide disagreement deals with secondary and postsecondary instructors having equal credibility. The majority (76 percent) of secondary respondents agreed whereas the majority (65 percent) of postsecondary respondents disagreed on this point. This data shows only the extent to which the respondents agreed or disagreed to the statements as they appeared on the questionnaire. The data does <u>not</u> show the reasons for the

agreement or disagreement. Table 7 presents the results of responses to these statements in full.

TABLE 7

BENEFITS OF ARTICULATION EFFORTS AS PERCEIVED BY SECONDARY AND POSTSECONDARY PERSONNEL

Statements	Type of Site	Number of Respondents	Percent of Responses			
			Strongly Agree	Agree	Disagree	Strongly Disagree
Interpersonal relations between secondary and postsecondary faculty are highly effective.	Postsec.	71	46.5	43.7	8.5	1.4
	Sec.	173	25.4	56.6	17.3	0.6
Instructors at the secondary and postsecondary levels in the program are viewed as having equal credibility.	Postsec.	70	0.0	34.3	53.5	10.0
	Sec.	176	23.3	53.5	23.3	0.0
Administrators in the postsecondary and secondary institutions see the articulation program as providing mutual benefits to both institutions.	Postsec.	69	55.7	44.3	0.0	0.0
	Sec.	176	45.5	47.2	6.3	1.1
Faculty in the postsecondary and secondary institutions see the articulation program as providing mutual benefits to both institutions.	Postsec.	69	33.3	56.5	10.1	0.0
	Sec.	176	26.1	60.8	11.9	1.1

In developing articulation agreements, it appears that no outside actors were actively involved in the articulation agreement design, although, at one site, a company was involved in initiating an examination of the possibilities of an articulation agreement. Unions, apparently, were not involved in any way.

Program Planning. Descriptions of the articulation program planning process vary widely. Researchers describing the process have different experiences and models in mind, start at different places in the process, and emphasize different points.

A number of program elements and qualities have been identified that are not only important to the planning process, but also essential for successful ongoing program operation.

Among them are strong and committed leadership from the top; early involvement of administrators, faculty, and counselors in the planning process; the establishment of open and effective communication links with a focus on mutual benefits rather than "turf" issues; the specific definition of responsibilities between articulating institutions; written articulation agreements; competency-based curriculum; and a commitment on the part of administrators and staff to do whatever is necessary to make the program work.

The site visits revealed a wide variety of patterns in the program planning process. Also, a surprising amount of variance existed in the degree to which some elements were important to program success. Programs varied a great deal in the degree to which the state was involved in pushing articulation at the local level. At one site, the state developed a highly detailed and comprehensive articulation plan; at a second site, the articulation program developed from the secondary-postsecondary relationship that was formed when the state designated the community college as the area vocational school; at two sites, programs developed as a result of state incentive grants (one to fund a pilot project, the other to encourage planning); and, at a fifth site, the program was developed by the college and school district and used by the state as a model for other areas of the state. The one common ingredient to success agreed on by representatives at all the sites was strong commitment to the program from the top local officials.

Articulation programs also varied widely in the extent to which they engaged in initial planning. At one site, an articulation coordinator was hired jointly by the school district and community college to develop an articulation plan. Wide participation was solicited from the beginning from administrators, instructors, counselors, and advisors. The process was kicked off at a dinner. Committees, organized by curriculum areas, developed reports contributing to the master plan. The entire process took a year and a half. At another site, curriculum committees were organized by craft areas to arrive at mutually acceptable courses and competencies. At a third site, by the time the instructional dean sent a memorandum inviting instructors to an articulation meeting at the high school, articulation was already a fait accompli, and details had been worked out by administrators.

Although all sites operate with signed secondary-postsecondary articulation agreements, written articulation plans spelling out goals and operational procedures range from extensive and detailed to none. At one site, although the program had developed without written procedures, the staff is moving toward standardizing and formalizing procedures to ensure program continuity beyond the tenure of current key individuals. At another site, however, the staff has purposely refrained from putting the model in writing, stating that they prefer to keep the program as informal as possible for maximum flexibility in operation.

Sites also varied in the degree of ambitiousness displayed in initiating their first articulation programs. In one case, the collaborating institutions pointedly limited their articulation efforts to a few programs in which they were certain they could achieve success. In other cases, programs were started with the intent of offering articulation on a districtwide basis and across a wide range of courses. One program, which is in its second decade of operation, experienced rapid growth because of the rapid expansion of businesses and industries in the area it services. Figures from the articulation programs surveyed, however, seem to indicate that few started with more than modest initial goals (see table 8). About one-third of respondents attached high importance to starting an articulation program with modest goals, and over 40 percent of both postsecondary and secondary respondents felt it was of moderate importance to program success. Whereas a few respondents indicated it was of low importance, almost none said it was of no importance.

Ongoing strategies for program maintenance must be developed by the articulation partners. Ongoing strategies include marketing existing arrangements to students and the community, monitoring program progress, ensuring maintenance of institutional contacts, and revising and updating agreements based on feedback (State University of New York, Albany 1985).

One of the most important elements common to the smooth operation of articulation programs is the maintenance of open channels of communication. The site visits revealed wide differences in the formalization, frequency, and regularity not only with which articulating institutions meet, but also with which the various actors--administrators, advisors, instructors, and counselors--meet. The most important of the three factors is frequency.

In two of the sites, administrators meet regularly and frequently. In one, the community college's president, vice-president for instruction, and dean for vocational education meet with the school district's superintendent and the vocational director in monthly formal meetings; in the other, the superintendent, regional vocational director, community college president, and other key actors hold weekly breakfast (6:30 a.m.) meetings. Staffs also meet regularly but informally for the most part. At the first site, one large staff meeting, involving administrators, instructors, counselors, and advisors, is held at the beginning of each school year as well as formally in-between times. At the second, the advisory committees meet on a formal basis annually, but hold frequent minimeetings to consider program policies and procedures. Instructors meet with major employers on an almost daily basis.

At a third site, the college and high schools very seldom meet formally but communicate frequently. The college, as the designated area vocational school, enters a contractual

TABLE 8

INITIAL GOALS IN ARTICULATION PROGRAM PLANNING

Initial Goal	Type of Site	Number of Respondents	Percent of Responses					
			High Importance	Medium Importance	Low Importance	No Importance	Not a Feature	No Opinion or Knowledge
The articulation program was started with modest initial goals.	Postsec.	79	34.1	44.3	8.8	0.0	5.0	7.5
	Sec.	177	31.6	41.8	14.1	1.7	2.8	7.9

relationship with the school district to offer vocational training to students on a given cost per full-time teaching equivalent (FTE) basis. If the students complete the program with the prescribed competencies, credits toward an associate degree are transcribed upon high school graduation. All planning is done with the college by the college staff. However, the program staff communicate with the relevant parties in the high schools frequently and informally to handle any concerns.

In the other two programs, meetings occur infrequently and informally. Secondary and postsecondary representatives meet when a need arises or they feel they have to. At one of the sites, instructors have expressed a need for more frequent meetings and more inclusion in the process.

A set of survey items was designed to gauge perceptions of the quality of secondary-postsecondary communication as a whole (see table 9). The data collected from these survey items present

TABLE 9

COMMUNICATION FACTORS IN SECONDARY-
POSTSECONDARY ARTICULATION PROGRAM RELATIONSHIPS

Factors	Type of Site	Number of Respondents	Percent of Responses			
			Strongly Agree	Agree	Disagree	Strongly Disagree
Relationships between the postsecondary and secondary administrators in the program are based on mutual respect and trust.	Postsec.	71	46.5	50.7	2.8	0.0
	Sec.	177	41.2	50.3	8.5	0.0
Communication between secondary and post-secondary faculty in the program is open, clear, and frequent.	Postsec.	69	18.8	53.6	26.1	1.4
	Sec.	176	13.1	52.3	10.7	4.0
The focus between the postsecondary and secondary institutions is on mutual goals rather than on "turf" considerations.	Postsec.	70	37.1	52.9	10.0	0.0
	Sec.	174	25.9	54.6	17.8	1.7
Responsibilities of secondary and post-secondary components of the program are clearly defined.	Postsec.	71	29.6	56.3	14.1	0.0
	Sec.	172	30.2	52.9	15.7	1.2

two patterns that warrant attention: first, although there is a high amount of correspondence between postsecondary and secondary responses, postsecondary respondents tend to rate the quality of communication slightly higher than do secondary respondents--they are slightly higher on agreement and lower on disagreement than secondary respondents. Second, only on one item, "relationships between postsecondary and secondary administrators are based on mutual respect and trust," is the percentage who strongly agree almost as high as those who agree.

On three of the four items in the set, schools responding in the first two response options, "strongly agree" and "agree," range from approximately 80 percent to approximately 98 percent. The weakest response is on the item measuring the degree to which communication is "open, clear, and frequent." Almost one-fourth of postsecondary respondents and one-third of secondary respondents disagree that communication between collaborating institutions is open, clear, and frequent. Eighteen percent of secondary schools and 10 percent of postsecondary schools reported that, in their articulation experience, the focus was on turf rather than goals. Around 15 percent of schools as a whole felt there was no clear definition of responsibilities between articulating secondary and postsecondary institutions.

Focusing attention more squarely on faculty cooperation (see table 10), schools believe it to be of great importance that faculty in articulation programs have effective working relationships. Over 40 percent of secondary and 45 percent of postsecondary respondents feel that effective relationships between faculty of institutions cooperating in articulation programs are highly important to program success; about one-third of both sets of respondents feel that effective faculty relationships are of medium importance. A low percentage--12 to 13 percent of both types of schools--feel they were of low importance. In the vast majority of programs, secondary and postsecondary faculty meet at least once a year on curriculum matters. Half of postsecondary schools and one-third of secondary schools feel that these meetings are essential factors in program success; 20 percent of postsecondary respondents and over one-fourth of secondary respondents rated such meetings of medium importance to success; and, again, 13 percent of the postsecondary and 12 percent of the secondary respondents regard them to be of low importance. Responses to the last item indicate that shared teaching is not a feature in about half the articulation programs. The remaining secondary responses were divided fairly evenly (at around 10 percent) across assigning the feature high, medium, low, and no importance. Close to another 10 percent had no opinion. Postsecondary respondents split evenly (17 percent) among those who regard shared teaching responsibilities of high importance and those who consider this factor to be of low importance to success. It was assigned medium importance by 11 percent of postsecondary respondents.

The survey was also used to determine the degree to which programs engage in joint labor market planning and use joint advisory committees. The results (see table 11 for complete

TABLE 10

COOPERATIVE FACTORS IN SECONDARY
AND POSTSECONDARY ARTICULATION SUCCESS

Factors	Type of Site	Number of Respondents	Percent of Responses					
			High Importance	Medium Importance	Low Importance	No Importance	Not a Feature	No Opinion or Knowledge
Postsecondary and secondary faculty participating in the articulation program have effective working relationships.	Postsec.	70	45.7	35.7	12.9	0	5.7	0
	Sec.	180	40.6	32.8	11.7	3.9	7.8	3.3
Postsecondary and secondary faculty participating in the articulation program meet at least once a year to address curriculum.	Postsec.	70	51.4	20.0	12.9	1.4	12.9	1.4
	Sec.	180	31.7	26.7	11.7	2.2	22.8	5.0
Faculty members in articulation program have shared teaching responsibility between the post-secondary and participating institutions.	Postsec.	71	16.9	11.3	16.9	5.6	46.5	2.8
	Sec.	179	10.1	11.2	8.9	10.1	50.8	8.9

TABLE 11

USE OF JOINT PLANNING ACTIVITIES
FOR SECONDARY AND POSTSECONDARY ARTICULATION PROGRAMS

Activities	Type of Site	Number of Respondents	Percent of Responses					
			High Importance	Medium Importance	Low Importance	No Importance	Not a Feature	No Opinion or Knowledge
The postsecondary and secondary administrators and faculty in the articulation program engage in joint labor market planning.	Postsec.	81	13.5	25.9	9.8	1.2	45.6	3.7
	Sec.	178	15.2	18.0	12.4	5.1	41.0	8.4
The secondary and postsecondary components of the articulation program use joint advisory committees.	Postsec.	71	23.9	23.9	22.5	7.0	0.0	0.0
	Sec.	178	13.5	16.9	10.1	3.9	50.6	5.1

responses) indicate that over 40 percent of institutions engaged in articulation do not engage in joint labor market planning; and, whereas about 23 percent of postsecondary schools report using joint advisory committees, half of the secondary schools report that it is not a feature of their program.

As for perceptions of importance of these activities to program success, only 14 percent of postsecondary and 15 percent of secondary respondents feel that joint labor market planning is essential, 26 percent of postsecondary and 18 percent of secondary regard it to be of medium importance, and 10 percent of postsecondary and 12 percent of secondary respondents feel the need for it is low. For joint advisory committees, roughly one-fourth of postsecondary respondents feel they are highly important, another one-fourth feel they are of medium importance, and just under one-fourth feel they are of low importance. For secondary schools, which reported being much less involved, only 14 percent regard joint advisory committees as highly important, about 17 percent assigned them medium importance, and 10 percent said their importance is low. Differences in reporting might be due to the nominal nature of some advisory committees.

Program representatives at the sites were asked to share their perceptions on the factors or qualities most important in establishing or replicating successful articulation programs. The most frequently mentioned factors were the following:

- The commitment of the people at the top--administrators and boards--to the program. There is no room for ego needs or charismatic personalities among top administrators involved in program initiation.

- The establishment of collegial relationships between secondary and postsecondary faculties. An important factor to establishing such relationships is to keep the focus on student and program needs and away from tough issues. Initial planning in one program was dubbed "Project Communicate."

- The adoption of an attitude on the part of each party of the articulation agreement to do whatever is necessary to cater to the needs of students and to the other party. One program director at a community college commented that his staff does not accept excuses for not meeting the needs of students and the school districts.

- The promotion of instructor and joint craft/advisory committee collegiality.

Program Evaluation

Most educators recognize the importance of program evaluation for improving programs. However, this recognition has not been

translated into active and systematic evaluations of articulation programs in vocational-technical education. Most of the exemplary sites visited did not engage in formal evaluation. The most frequently cited evaluation measure was the fact that enrollments were sufficient to maintain the programs. Personnel at the secondary level indicated that a measure of program success is the extent to which students are successful at the postsecondary institution.

As shown in table 12, the mail survey respondents confirmed the low level of evaluation activity by indicating that postsecondary and secondary articulation programs frequently do not use common evaluation systems. In fact, only 20 percent of the postsecondary respondents and 18 percent of the secondary respondents indicated that using a common evaluation system was of high importance. However, about 40 percent of the postsecondary and secondary respondents indicated that it was of medium to high importance for the secondary and postsecondary components of the articulation program to use a common evaluation system.

Some of the exemplary sites visited were using a variety of program evaluation procedures and techniques, such as follow-up of former students, survey of employers concerning performance of former students, advisory committee assessments of various program aspects, analysis of job placements, and external review teams, such as regional or state accreditation teams. Some changes made at the exemplary sites as a result of program evaluation activities include modifying curriculum, purchasing new equipment, updating laboratories, and changing course sequence.

Program Management

Aside from instructional responsibilities, additional program management functions required to keep articulation programs in operation are likely to appear in the areas of scheduling, record keeping (e.g., attendance, grades, competencies earned), recruiting, follow-up, agreement renegotiating, and staff development. The site visits showed differences both in the staff used to handle such functions and in the way responsibilities were divided between postsecondary and secondary institutions.

At two of the program sites, additional management responsibilities are handled largely by existing staff as add-on responsibilities. At a third site, where secondary students are taught at the community college, record keeping is coordinated for the college and high schools by a half-time secretary who is located at the college. In a larger program, a manager and three specialists perform responsibilities of program coordination, school visitation, student follow-up, and agreement renegotiation. Counselors and staff at high schools assist the college with recruiting and carry the responsibility of scheduling, record keeping, and making sure students graduate on schedule.

TABLE 12

IMPORTANCE OF COMMON EVALUATION SYSTEM

Factor	Type of Site	Number of Respondents	Percent of Responses					
			High Importance	Medium Importance	Low Importance	No Importance	Not a Feature	No Opinion or Knowledge
Secondary and post-secondary components of the articulation program use a common evaluation system.	Postsec.	81	19.7	19.7	9.8	1.2	44.4	4.9
	Sec.	178	18.0	23.6	9.0	2.2	38.2	9.0

A fifth program is a standalone area vocational program at the college that contracts vocational services to the area school districts. In this program, all administrative responsibilities lie with the college. Even in this case, however, the vocational coordinators in the districts perform counseling functions and a certain amount of record keeping to ensure that students graduate on time.

Coordination is, potentially, a highly sensitive area of program management for articulating institutions. A suspicion of bias in the loyalty of the program coordinator can seriously damage the effort. An arrangement by which power is shared is the solution most frequently chosen by the exemplary sites.

In three of the programs visited, the job of coordination is shared between the secondary and postsecondary institutions. At two of the community colleges, chairpersons are one of the cochairs; in the third, it is the dean of instruction. At the secondary schools, the position of cochair is held by a department chair, the superintendent of a regional vocational school, and a district vocational director.

One of the programs currently operating with dual coordinators was started with a single coordinator, hired jointly by the college president and the district superintendent. For the first 4 years of the program's operation, office sites were maintained both at the high school and college, and time was split evenly--2 1/2 days in each office. The job was divided as the program grew and became too demanding for one person.

In one of the two programs with a single coordinator, the position is held by the vocational dean of the technical college. He operates with an advisory board that has equal secondary and postsecondary representation, including state-level administrators. In the other program with a single head, the fact that the college has a contractual relationship with the area school districts to provide vocational services also casts the program director in a role that allows him to be perceived (correctly) as a provider of services to the school districts.

Of the programs surveyed, 52 percent of postsecondary and 40 percent of secondary institutions do not employ a joint program coordinator (see table 13). However, close to one-fourth of total postsecondary respondents and 24 percent of total secondary respondents regard single-person coordination as highly important to program success; another 9 percent of postsecondary respondents and 17 percent of secondary respondents feel it is of medium importance. Ten percent of postsecondary respondents and 5 percent of secondary respondents feel it is of little importance to success. No postsecondary respondents and only 3 percent of secondary respondents feel it is of no importance.

Two troublesome problems for some articulation programs revolve around scheduling. The most common and sometimes toughest

TABLE 13

SINGLE PROGRAM COORDINATOR AS A
FACTOR IN ARTICULATION PROGRAM SUCCESS

Factor	Type of Site	Number of Respondents	Percent of Responses					
			High Importance	Medium Importance	Low Importance	No Importance	Not a Feature	No Opinion or Knowledge
There is a single articulation program coordinator for participating secondary and post-secondary institutions.	Postsec.	71	23.9	8.5	9.9	0	52.1	5.6
	Sec	176	20.5	17.0	5.1	2.8	40.9	13.6

to resolve stems from the fact that postsecondary schools generally have fewer required days of instruction than secondary schools. The problem is how to give secondary students who take classes at the postsecondary institutions full secondary credit. Schools have tried a couple of approaches, such as, requiring students to work on course-related jobs prior to the start of the school year, requesting the state to grant full credit for fewer days of instruction (Long, Warmbrod, Faddis, and Lerner 1986). A second scheduling problem is that of accommodating students at nontraditional hours.

Representatives of schools that were surveyed were asked if their programs had adopted common secondary-postsecondary school calendars, and if articulation courses were offered at hours nontraditional to the public schools (see table 14). Eighteen percent of total postsecondary schools and 13 percent of total secondary schools regard common calendars as being of high importance; 10 percent of postsecondary schools and 12 percent of secondary schools assign common calendars medium importance. Surprisingly, 23 percent of postsecondary respondents regard common calendars to be of low importance to program success. Of secondary school respondents, 12 percent said the feature is of little importance and another 11 percent said it is of no importance to success. It could be that, although not having common calendars could be troublesome and would need to be dealt with, this difference is not a real threat to program success for schools that hold articulation as a priority.

Nontraditional course hours are not a program feature for over 40 percent of postsecondary and nearly 50 percent of secondary schools (see the second item in table 14). Only 6 percent and 7 percent, respectively, of postsecondary and secondary schools said it is highly important to their programs' successes.

Commitment. For an articulation agreement to be developed and successfully implemented, many actors must be committed to the process. The initial vision and commitment may come from an individual who will not be involved in the day-to-day articulation activities but who has the authority to set policy. Commitment from individuals of this type is necessary; however, the commitment from instructors, counselors, and others whose functions will be directly affected is just as important.

At one of the exemplary sites, the discussion of articulation was initiated by the regional vocational-technical high school. The superintendent of that school is characterized as being committed to both articulation and vocational education. However, commitment on the part of the administration of the community college was also necessary to make articulation a reality. In this case, it was the president of the community college who leant administrative support to the concept.

TABLE 14

SCHEDULING FACTORS IN ARTICULATION PROGRAM SERVICES

Factor	Type of Site	Number of Respondents	Percent of Responses					
			High Importance	Medium Importance	Low Importance	No Importance	Not a Feature	No Opinion or Knowledge
Common school calendars have been adopted among the postsecondary and participating secondary institutions.	Postsec.	71	18.3	9.9	22.5	5.6	40.8	2.8
	Sec.	180	13.3	11.7	11.7	10.6	42.2	10.6
Courses related to the articulation program are offered at hours nontraditional to the public school (for example, early morning, late evening, summer).	Postsec.	70	5.7	21.4	20.0	8.6	41.4	2.9
	Sec.	178	7.3	15.7	12.4	7.9	46.6	10.1

At a second exemplary site, the state provided the impetus/commitment to articulation in the form of a grant to the technical college. The project staff and high school personnel are committed to articulation; however, the dean and associate dean of the technical college are perceived as not promoting the articulation program, perhaps because of long-standing friction between the technical college and high school vocational programs that is said to stem from course duplication issues, or perhaps because they sense that their instructors are not committed to the agreement (the instructors perceive the articulation program to infringe on their job security plus they feel their voice was not adequately represented in developing the agreement).

At another of the exemplary site, the community college president, the vice-president for instruction, and the area vocational director are committed to the success of the articulation programs, and their commitment is perceived as being of great importance to the success of the program.

At three of the sites, the level of commitment on the part of all parties has increased with time. The reasons for the increased level of commitment vary: people adjusting to the concept over time; the installation of a new president; and resource crises, which have made articulation an increasingly desirable alternative to other budget-reduction efforts.

Survey respondents were queried regarding their perceptions of the degree of importance various manifestations of commitment have to their articulation programs. The attitudes of local postsecondary as well as secondary administrators was viewed as key to articulation program success. The complete results are presented in table 15.

The questionnaire also contained queries regarding the level of importance of the commitment of personnel to their articulation program. Postsecondary personnel feel even more strongly than secondary personnel about the importance of strong commitment and leadership from the top. Postsecondary and secondary responses to the importance of early involvement of faculty in the articulation process are fairly similar. Table 16 provides details of responses.

When asked on the questionnaire to list the titles of the three most important institutional employees to the initiation of an articulation program, (i.e., who demonstrated the greatest commitment initially) the three most frequently mentioned by secondary respondents are vocational-technical coordinator/ director, teacher, and principal; the three most frequently mentioned by postsecondary respondents are dean of instruction/ academic dean, faculty, and dean of vocational-technical education. A complete list of responses is presented in table 17.

TABLE 15

PERCEIVED IMPORTANCE OF LOCAL PERSONNEL'S
COMMITMENT TO SECONDARY-POSTSECONDARY PROGRAM ARTICULATION

Factors	Type of Site	Number of Respondents	Percent of Responses					
			High Importance	Medium Importance	Low Importance	No Importance	Not a Feature	No Opinion or Knowledge
Local postsecondary administrators in participating institutions view vocational-technical articulation as a high institutional priority.	Postsec.	71	63.4	31.0	42.0	0.0	0.0	1.4
	Sec.	177	55.4	31.1	10.2	0.6	1.1	1.7
Local secondary administrators view vocational-technical articulation as a high institutional priority.	Postsec.	71	54.9	32.4	8.5	0.0	1.4	2.8
	Sec.	179	49.7	33.5	14.5	1.1	0.0	1.1
The faculty teaching in participating secondary institutions regard the articulation process as a personal priority.	Postsec.	71	35.2	32.4	23.9	0.0	2.8	5.6
	Sec.	176	25.8	39.9	22.5	3.9	3.9	3.9
The postsecondary teaching faculty faculty regard the articulation program as a personal priority.	Postsec.	71	35.2	40,8	18.3	2.8	0.0	2.8
	Sec.	178	22.2	36.4	18.2	4.5	2.8	15.9
Guidance and counseling personnel in participating secondary institutions view the articulation process as a personal priority.	Postsec.	71	23.9	31.0	35.2	4.2	1.4	4.2
	Sec.	178	26.4	36.5	21.3	5.1	5.1	5.6
Postsecondary counseling personnel view the articulation process as a personal priority.	Postsec.	71	23.9	39.4	26.8	1.4	1.4	7.0
	Sec.	179	21.8	26.8	17.3	3.4	3.4	27.4

TABLE 16

PERCEIVED IMPORTANCE OF COMMITMENT AND PARTICIPATION OF SECONDARY AND POSTSECONDARY STAFF

Factors	Type of Site	Number of Respondents	Percent of Responses			
			Strongly Agree	Agree	Disagree	Strongly Disagree
The program operates with strong commitment and leadership from the top.	Postsec.	70	50.0	40.0	10.0	0
	Sec.	173	36.4	42.2	20.2	1.2
Participating secondary and postsecondary faculty were involved in the articulation process.	Postsec.	70	47.1	45.7	7.1	0
	Sec.	171	45.0	40.9	13.5	0.6

What about the level of student commitment that our respondents see as measured by completion rates? Questionnaire results show the majority of postsecondary (77 percent) and secondary (65 percent) respondents believe program completion rates are about the same for students in articulated versus nonarticulated programs.

Financial. Initiating articulation programs requires staff time, which costs money, either directly or indirectly. At one site, the state provided 50 percent of the funds with a requirement for a 50 percent soft match from the technical college to fund a project at the technical college to initiate articulation between that institution and the surrounding secondary schools. The state funds came from Perkins Act monies. In Maryland, the state board for community colleges "has supported three mini-grants which have resulted in the realization of articulation agreements at the program level" (Parsons 1980, p. 3). In California, the Sacramento City Unified School District and Sacramento City College jointly established an articulation council to facilitate agreements between them; the council has received funds to support articulation efforts from such sources as the Fund for Instructional Improvement, the California Academic Partnership Program, and the Sears Roebuck Foundation (Cary, Work, and Wellsfy 1986).

How are postsecondary schools compensated for postsecondary credit granted as a result of work conducted while the student is still in high school? At one of the exemplary sites, students who participate in the articulation program receive 12 credits of advanced standing upon enrollment in the community college that participates in the articulation agreement; if the student chooses to enroll at a different postsecondary institution, the student

TABLE 17

PERCEIVED IMPORTANCE OF THE ROLES OF VARIOUS
POSTSECONDARY AND SECONDARY PERSONNEL IN INITIATING ARTICULATION PROGRAMS

Position	Number of Respondents Selecting Positions	
	Postsecondary (n=198)	Secondary (n=433)
Postsecondary		
President	21	29
Vice-President	1	0
Dean of Instruction/Academic Dean	38	20
Dean of Vocational-Technical Education	18	23
Departmental Dean/Director	25	10
Faculty	31	8
Counselor/Advisor	10	1
Other	13	3
Secondary		
Superintendent	6	35
Principal	9	44
Assistant Principal	0	0
Vocational-Technical Coordinator/Director	13	94
Teacher	3	81
Counselor	4	43
Chairperson	0	15
Other	0	25
Postsecondary/Secondary		
Articulation Coordinator	4	2

must pay tuition for the courses to receive credit. At a second exemplary site, students take nontechnical first-year technical college courses outside secondary school hours. The public school system pays one-half of the tuition charged by the technical college; the student pays the other one-half.

At a third site, articulation students are concurrently counted as FTE at the postsecondary and secondary levels. This is possible, in part, because the FTE at the postsecondary level are not tied to a funding formula. There is, however, an add-on formula that generates dollars for the articulation program. When secondary school staff were queried via the mail survey regarding concurrent enrollment, 63 percent of the respondents said students were not concurrently enrolled. Of the 37 percent who said the students are concurrently enrolled, 23 percent said the students are counted as FTE at the secondary level, 20 percent said they are counted as FTE at the postsecondary level, and 57 percent said they are counted as FTE at both levels. A search of the literature provided the following regarding payment of articulation program costs.

> The thirteen participating school districts pay the total costs for the programs. The budget is developed as part of the college's annual budget in the Spring and is allocated among the thirteen participants on a per student tuition basis. This contracted service relationship requires that operating and capital budgets for the secondary vocational program exist as a separate cost center within the overall college budget. (Breuder and Martin 1985-86, p. 33)

Of concern to all is the cost of education. Is the average per-pupil expenditure for secondary students in articulated programs higher than for students who do not participate in articulation programs? The results of data collected via questionnaire indicate that costs are about the same (83 percent). Only 10 percent of respondents said costs are higher and 7 percent said costs are lower.

Facilities and equipment. The adequacy of facilities and equipment is an important factor in any occupational training program. The cost of equipment, especially in rapidly changing fields, is high. Facilities suitable in size and configuration for housing some programs are prohibitive in cost. How adequate are the facilities and equipment used by articulation programs? How have articulation partners coped with the costs of programs?

The facilities for the articulation program at one exemplary site have recently been expanded and the equipment is current. At a second site, the high school facilities are old and, consequently, inconvenient, but in good condition and the equipment is generally in good condition and current; the equipment and facilities at the technical college at this site were described as "good." The secondary facilities at another site were characterized by the area vocational director as adequate, but the

equipment was described as inadequate because of rapidly changing technology. The postsecondary facilities, on the other hand, are stretched to the limit during peak hours (mornings and evenings), and the postsecondary's equipment, in some program areas, needs to be updated. At another of the exemplary sites, the high schools sometimes have better equipment than the technical college. For example, the best CAD (computer-assisted design) equipment is located in one of the high schools. The postsecondary equipment is still current but not state-of-the-art. At this site, major reason for the existence of the articulation program is to better utilize equipment.

How many articulation agreements include sharing facilities and equipment? At one of the sites, the general vocational program was designed to use the community college facilities for the majority of programs. The secondary schools are assessed a predetermined fee per secondary student participating in the program. In Arizona, the community college is planning to move some of its equipment to the district vocational center; in return, the community college will be permitted to use those facilities during the evenings. New equipment purchased by the vocational center has been installed at the community college and is used by high school and postsecondary students (Day 1986).

When polled to determine the perceived importance to their articulation program of using joint facilities, the majority of secondary and postsecondary respondents said it was not a feature. See table 18 for complete details.

Summary. The prospect of deriving mutual benefits are a stronger incentive for secondary-postsecondary vocational-technical articulation than state mandates. The increasing state role in articulation can be centered most usefully on removing bureaucratic hurdles, providing information, and ensuring continuity in financial support. Potential stakeholders include students, secondary and postsecondary schools, business/industry, teachers, and state agencies, and they should be educated as to their potential benefits of early involvement.

Program planning can be divided into initiation, implementation, and institutionalization phases. The specific activities, sequence, and, in some cases, even phases in which they occur can vary, depending on local circumstances. Programs revealed a wide variety of planning patterns in degree of state involvement, extent of initial planning, breadth of involvement, level of ambition in program goals, and the degree to which program procedures are specified. Program qualities most often mentioned as essential are strong and committed leadership from the top, free of strong egos and charismatic personalities; early and wide involvement of faculty, staff, and other stakeholders; focus on mutual benefits; and commitment on the part of staff to do whatever is necessary to make articulation succeed.

TABLE 18

PERCEIVED IMPORTANCE OF USING SHARED FACILITIES

Factor	Type of Site	Number of Respondents	Percent of Responses					
			High Importance	Medium Importance	Low Importance	No Importance	Not a Feature	No Opinion or Knowledge
The secondary and postsecondary components of the articulation program use joint education/ training facilities.	Postsec.	71	15.5	11.3	9.9	5.6	56.3	1.4
	Sec.	177	14.1	10.7	7.3	4.0	60.5	3.4

The degree of formality, frequency, and regularity of meetings varies from program to program, but the most important of these factors is frequency.

Program coordination may be performed by two persons (one secondary and one postsecondary) or by a single person jointly hired by secondary and postsecondary levels.

In general, minimal evaluation activities are conducted to determine articulation program efficiency and effectiveness. Primary evaluation activities include former student follow-up, employer surveys, and analysis of job placement.

Program management functions likely to be required include record keeping, recruiting, follow-up, renegotiating agreements, and staff development. Although program management functions are sometimes handled by employing extra staff, in many programs, these functions become add-on responsibilities for staff of the articulating institutions.

The most frequently mentioned initiators of articulation from the secondary level are vocational-technical coordinators/directors, teachers, and principals; and from the postsecondary, the deans of instruction/academic deans, instructors, and deans of vocational-technical education.

In a majority of articulation programs, secondary students are not simultaneously enrolled as postsecondary students, but where they are, in the majority of cases, they are counted as full-time teaching equivalents (FTEs) in both institutions. Per-pupil expenditures for secondary students in most articulation programs are about the same as for students in nonarticulated programs.

Although a major reason given for establishing articulation programs is to share equipment and facilities, most articulation programs report that use of joint facilities is not a program feature.

Curriculum

A number of key factors contribute to the success of articulation programs, but it is the curriculum that determines much of the competencies students will acquire and the effectiveness and efficiency of the articulation effort. Woelfer (1975) underscored the significance of curriculum when he noted that

> articulation of an occupational program, for practical purposes, is next to impossible to achieve without: (1) commonality of curriculum instructional content, (2) coordinated instructional objectives for the same levels of instruction, (3) standardization of competency or

skill standards, and (4) awareness of instructors of what is taught by others in the occupation. (p. 65)

The mail survey respondents supported competency-based curriculum (see table 19) as an important feature of vocational-technical education programs. As shown in table 12, the post-secondary and secondary mail survey respondents indicated strong support for clearly identified standard competencies for articulation programs. Most of the exemplary sites visited had competency-based programs or were moving in that direction.

TABLE 19

IMPORTANCE OF STANDARD COMPETENCIES

Factor	Type of Site	Number of Respondents	Percent of Responses			
			Strongly Agree	Agree	Disagree	Strongly Disagree
Standard competencies for the articulation program are clearly identified.	Postsec.	70	28.6	51.4	20.0	0.0
	Sec.	173	36.4	42.2	20.2	1.2

Henderson, Ervin, Nix, and Black (1986) suggest that a "key to success with articulation lies in the commitment of the instructors. It is at this level that curricula are determined and measures of successful completion are agreed upon" (p. 5). It would seem that, if instructors are such a key element to program success, it would be essential to have joint development of the articulation program curriculum by instructors from participating schools. The mail survey respondents, as shown in table 20, gave high importance to joint curriculum development; however, about one-fourth of the secondary school respondents indicated that joint curriculum development is not a feature of the articulation program.

Secondary and postsecondary respondents to the mail survey provide strong support for faculty members needing to clearly understand the articulation program goals and objectives (table 20). Interviewees at the exemplary sites confirmed the importance of faculty involvement in determining program goals and objectives.

The extent to which articulation programs are open-entry/open-exit varied considerably at the exemplary sites. As shown in table 20, about one-fourth of the secondary school and about 44 percent of the postsecondary institution mail survey respondents indicated that open-entry/open-exit is not a feature of their articulation program. However, nearly one-third of the postsecondary and over one-half of the secondary mail survey

TABLE 20

IMPORTANCE OF CURRICULUM-RELATED FACTORS AS
PERCEIVED BY SECONDARY AND POSTSECONDARY PERSONNEL

Factors	Type of Site	Number of Respondents	Percent of Responses					
			High Importance	Medium Importance	Low Importance	No Importance	Not a Feature	No Opinion or Knowledg
The curriculum is competency-based.	Postsec.	71	52.1	36.6	4.2	0.0	0	7.0
	Sec.	177	69.5	20.9	2.3	0.6	3.4	3.4
The curriculum was developed jointly by the instructors from the partici-	Postsec.	71	43.7	22.5	8.5	5.6	19.7	0.0
institutions/schools.	Sec.	179	38.0	26.3	5.6	1.1	25.1	3.9
Program goals and objectives are understood by faculty at the	Postsec.	71	53.5	28.2	9.9	0.0	5.6	2.8
participating secondary institution.	Sec.	179	51.4	30.7	9.5	0.6	3.9	3.9
Program goals and objectives are clearly understood by faculty at the	Postsec.	71	63.4	26.8	7.0	0.0	2.8	0.0
postsecondary institution.	Sec.	179	41.3	31.8	7.3	0.6	2.8	16.2
The articulation program is open-	Postsec.	71	15.5	15.5	15.5	2.8	43.7	7.0
entry/open-exit.	Sec.	177	24.9	27.7	8.5	1.7	24.9	12.4

respondents indicated that the open-entry/open-exit feature is of medium-to-high importance for articulation programs.

Summary. The curriculum is viewed as being an extremely important element in determining the success of articulation programs. The study participants supported clearly identified standard competencies, competency-based programs, and joint postsecondary-secondary teacher development of the curriculum. The concept of open-entry/open-exit programs as being essential for articulation program success received mixed support.

Support Services

Among the exemplary programs visited, several support services were provided, but no clear patterns emerged across the five sites. Remediation services provided at the sites varied from assistance by the classroom teacher to special resource centers or tutoring programs. As shown in table 21, over one-third of the postsecondary and secondary mail survey respondents indicated that remediation services are not available as a part of the articulation program. However, over one-half of the postsecondary respondents and about one-third of the secondary respondents think remediation services were of medium-to-high importance.

Slightly over one-fourth of the postsecondary and secondary mail survey respondents (table 21) deemed active vocational-technical student organizations to be of medium-to-high importance for the articulation program. In some of the exemplary sites, student organizations were viewed as having an important role to play in leadership development.

At some of the exemplary sites, transportation was provided to students. In one school, the bus was equipped with video machines, monitors, and headphones for students.

Summary. Remediation services are viewed as being an important support service for effective articulation programs. Vocational-technical youth organizations are not rated as highly important by the study participants.

Promotion

Promotion of the vocational-technical education articulation program was viewed as important by those interviewed at the exemplary sites. Publicity is provided about articulation programs through a multitude of ways, including student handbooks, newsletters, college catalogs, classroom teachers, and radio, television, and newspaper releases. Most interviewees agreed that "ultimately, word-of-mouth may be the most effective form of publicity."

TABLE 21

IMPORTANCE OF STUDENT ORGANIZATIONS AND
REMEDIATION SERVICES FOR ARTICULATION PROGRAMS

Factors	Type of Site	Number of Respondents	Percent of Responses					
			High Importance	Medium Importance	Low Importance	No Importance	Not a Feature	No Opinion or Knowledge
Vocational/technical student organizations are active in the articulated program areas.	Postsec.	71	12.7	15.5	11.3	1.4	53.5	5.6
	Sec.	179	12.3	15.1	20.1	6.1	36.9	9.5
Remediation services for students are available as part of the articulation program.	Postsec.	71	37.0	19.7	4.9	0	34.5	3.7
	Sec.	178	14.0	18.5	12.9	3.4	38.2	12.9

Promotional activities have also frequently included career counseling activities such as career days, job fairs, individual counseling sessions, and small group counseling sessions. Some secondary schools use an exploratory period where students learn about the articulation program. The mail survey respondents (see table 22) indicated minimal use of radio, television, and newspapers as major means of program promotion. More reliance is placed on teachers, students, and counselors to promote the articulation programs.

TABLE 22

MAJOR MEANS OF
ARTICULATION PROGRAM PROMOTION

Promotional Methods	Type of Site	Number of Respondents	Percent of Responses by Order of Importance			
			First	Second	Third	Fourth
T.V.	Postsec.	9	0	11.1	44.4	44.4
	Sec.	25	4.0	28.0	36.0	32.0
Radio	Postsec.	9	22.2	33.3	33.3	11.1
	Sec.	27	7.4	33.3	48.1	11.1
Newspapers	Postsec.	16	37.5	56.3	6.3	0
	Sec.	49	63.1	30.6	4.1	2.0
Others	Postsec.	60	91.7	1.7	1.7	5.0
	Sec.	125	94.4	0.8	1.6	3.2

The mail survey respondents indicated (table 23) that secondary teachers and secondary counselors were the most common ways that students learned about the articulation programs. However, it should be remembered that the mail survey respondents were mostly administrators and teachers. Students might not respond in the same way.

Summary. Promotion of articulation programs is done mostly by word-of-mouth. Students, teachers, and counselors are considered the most effective form of publicity. Minimal use is made of television, radio, and newspapers.

TABLE 23

MOST COMMON WAYS STUDENTS
LEARN ABOUT THE ARTICULATION PROGRAM

Ways	Type of Site	Number of Respondents	Percent of Responses by Order of Importance				
			First	Second	Third	Fourth	Fifth
Secondary guidance counselors	Postsec.	46	28.3	45.7	17.4	4.3	4.3
	Sec.	111	45.0	29.7	17.1	8.1	0
Secondary teachers	Postsec.	46	56.5	23.9	6.5	10.9	2.2
	Sec.	111	52.3	23.4	16.2	5.4	2.7
Other students	Postsec.	38	23.7	13.2	42.1	18.4	2.6
	Sec.	86	11.6	31.4	38.4	17.4	1.2
Promotional materials	Postsec.	36	5.6	13.9	30.6	47.2	2.8
	Sec.	84	7.1	16.7	23.8	51.2	1.2
Others	Postsec.	12	33.3	8.3	25.0	33.3	0
	Sec.	17	47.1	0	17.6	5.9	29.4

CHAPTER 4

RECOMMENDATIONS

The recommendations for improving vocational-technical education articulation programs must be viewed in light of the contextual characteristics surrounding such programs. Given the enormous diversity and complexity of such contextual characteristics, one must be cautious about assuming equal applicability of the recommendations for all situations. Many consider these unique characteristics to be a substantial strength of our education system. However, it is critical to remember that the findings in one setting are transferable to another setting only to the extent that those settings possess characteristics similar to the settings studied. In other words, what works in one setting may or may not work in another setting.

Based on an analysis and synthesis of the information collected, the following recommendations are made for the improvement of current or the implementation of new vocational-technical education articulation programs:

- o Articulation program goals should be developed jointly by stakeholders (administrators, supervisors, teachers, business/industry representatives, parents, and students).

It may not be necessary to include everyone in all meetings, but each stakeholder should have the opportunity to present his or her beliefs and values concerning articulation program goals. In large programs, several subgroups may be needed to address program goals.

- o Articulation program goals should be realistic and attainable.

It is important to be able to build upon success. The goals selected should be important and they should represent the broad interests of the program stakeholders. As the articulation program matures, the goals can become more diverse and complex.

- o Articulation program stakeholders should be involved in strategic planning and program evaluation processes.

In a fast-changing, technogically oriented world, attention must be given to strategic planning and program evaluation. Articulation programs must keep pace with the changes significant to their substantive base. The processes used to initiate and conduct articulation programs must be under continuous assessment for efficiency and effectiveness.

- o Stakeholders should be involved in the initial articulation program planning processes.

A number of critical decisions are usually made in the initial meetings concerning the implementation of an articulation program. Unless stakeholders are involved in these meetings, there will not be the stakeholder support essential to the initiation of an articulation program. Teachers whose programs will be affected must be participants in the initial planning process.

- o Strong commitment for articulation programs must be evidenced by governing boards, chief executive officers, managers, teachers, counselors, and other staff.

This support must be strong, continuous, and highly visible. Such commitment should be evidenced through official policies, public statements, press releases, by time and effort expended, and by the allocation of resources sufficient to address the complex issues essential to an effective articulation program.

- o Stakeholders must be committed to overcoming barriers to make the articulation program effective and efficient.

Nearly every program will encounter hurdles to its implementation. If the stakeholders are committed to making the program successful, no insurmountable barriers will exist.

- o Postsecondary and secondary schools that are planning or maintaining articulation programs should schedule regular joint meetings of key personnel (administrators, counselors, and teachers) to address issues and concerns.

Issues and concerns will emerge with regularity when multiple institutions are involved in joint efforts. Joint, regularly scheduled meetings of key personnel where there is open discussion of all issues and concerns will help keep sensitive areas from becoming obstacles to effective programs.

- o A continuous flow of information about the articulation program needs to be maintained to all stakeholders and especially to potential students.

Potential students, parents, counselors, and teachers need to have the same information about the articulation program on a continuous basis. It is essential that the stakeholders be able to speak and operate from the same information base.

- o Staff development programs should be planned and conducted for staff who have responsibilities for planning, implementing, and maintaining articulation programs.

These programs should be conducted jointly among the institutions involved in the articulation program. Outside expertise should be considered for assisting staff in conceptualizing and implementing articulation programs. Outside

expertise can also be used in those areas that are sensitive and difficult for current staff to handle.

- o Communication channels and areas of responsibility regarding the articulation program among all participating institutions must be clear.

As the number of institutions increases, the complexity of open communications increases. However, even with a minimal number of institutions involved, need exists for open, clear, and frequent communication among the key personnel.

- o Facilities and equipment for articulation programs should be shared where distances for student travel are not prohibitive.

In many of the rapidly changing technological areas, it will be almost impossible for each institution to have modern facilities and equipment. The sharing of facilities and equipment can result in cost sharing as well as provide learners the opportunity to acquire skills in using equipment being used by potential employers.

- o Key articulation program staff should be encouraged to visit exemplary articulation programs to observe different strategies and processes.

Key staff should be encouraged to learn about the features of other programs and supported with travel and per diem to do so. The interchange of ideas with staff in other localities has the potential to be a sound investment of resources.

- o Extern programs should be developed that would allow prospective articulation program students to spend one or two days with a student currently enrolled in an articulation program.

Currently enrolled students can be mentors for new students as they enter the program. Such a program would enable students to (1) broaden their perspective of career opportunities, (2) understand how the articulation program works, and (3) examine their expectations and attitudes about career choices.

- o Articulation program alumni should be used as speakers at dinners, receptions, and career nights to inform staff and potential students about the articulation program.

These occasions can be used to convey positive images about the articulation program. They can be especially helpful in allaying fears potential students may have about entering the program.

- o A process should be developed to facilitate postsecondary and secondary articulation program teachers meeting on a regular basis to discuss mutual concerns.

The teachers are a strong link in making articulation work. If articulation programs are to be sustained with vitality, it is absolutely essential that postsecondary and secondary teachers are provided opportunities to discuss all aspects of the program in a noncoercive environment.

- o Institutions should focus on common mutual goals developed to improve educational programs and services rather than focus on individual institutional "turf" rights and privileges.

The opportunity for institutions to compete for programs and students is always present. Resources are too limited for stakeholders to become engaged in "turf" battles. Areas of agreement need to be identified, and these must be built upon so that all institutions are working for the common good of the people they are serving.

- o Competencies essential for students to acquire should be identified, the curriculum should be built on these competencies, and the curriculum sequence should be jointly determined as should the institutional articulation responsibilities for delivering the articulation program.

The identification of competencies provides a structure for building courses. It also provides a common language for teachers and students to use in discussing substantive issues. However, caution must be exercised in the instructional process to ensure that students are provided opportunities to interact with teachers and with each other. The instructional process must not be so structured that no opportunity exists for students to develop higher order thinking skills.

- o A written articulation program agreement should be developed that clearly specifies goals and institutional responsibilities.

Written agreements that are executed and signed by institutional administrators convey important messages of commitment and institutional intent. These agreements should be reviewed annually to ensure continued smooth program operation. The degree to which operational procedures should be specified varies greatly. Some institutions will prefer to have operational flexibility permitted by having agreements written at the general policy level.

- o An individual should be assigned responsibility for the articulation program.

The best arrangement that shows interinstitutional commitment and cooperation is the joint employment of a single articulation coordinator. If the size of the articulation program does not merit such an arrangement, or there are insufficient resources, then a current staff member at each participating institution should be designated coordination responsibilities.

- o State agencies should encourage vocational-technical education program articulation.

The most effective leadership is provided by sponsoring conferences or workshops, funding exemplary efforts, and ensuring there are no roadblocks to articulation program implementation. State-level mandates are not seen as a particularly effective means of encouraging articulation programs.

APPENDIX

MAIL QUESTIONNAIRES

SECONDARY VOCATIONAL-TECHNICAL EDUCATION ARTICULATION SURVEY

The purpose of this survey is to collect relevant information for a national study of secondary to postsecondary articulation of vocational technical education programs. The study is being conducted by the National Center for Research in Vocational Education at The Ohio State University under contract with the U.S. Department of Education. Outcomes of this study will include--

- o a description of successes of secondary and postsecondary schools in meeting their projected articulation outcomes,
- o identification of factors which influence the attainment of articulation outcomes, and
- o recommendations for institutional consideration when implementing or modifying vocational technical education articulation programs.

Definitions that may be useful to you in completing this survey instrument are found in Attachment A.

I. RESPONDENT INFORMATION

Please complete the following:

School _____ (name)
_____ (address)
_____ City State Zip

Respondent _____
Title _____
Telephone No. _____

II. GENERAL INFORMATION

Directions: Please make the appropriate response.

A. Your school is a:

1. ☐ Public joint vocational school
2. ☐ Comprehensive high school

II. **GENERAL INFORMATION** (continued)

B. Your school has had a written articulation agreement with one or more public postsecondary schools for at least three years.

1. ☐ Yes

2. ☐ No (Do not fill out the rest of the questionnaire. Turn to Section VIII for instructions.)

C. The articulation program was initiated by (check more than one if jointly initiated)--

☐ State postsecondary education office

☐ State department of education (K-12)

☐ local postsecondary institution

☐ local secondary school district

☐ area or regional vocational institution

☐ other _____

D. Rate the ***level of importance*** of each item as a goal of the articulation program

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)
1. Increased service to students	☐	☐	☐	☐
2. Increased service to employers	☐	☐	☐	☐
3. Program improvement/educational excellence	☐	☐	☐	☐
4. Student retention	☐	☐	☐	☐
5. Reduction of program cost	☐	☐	☐	☐
6. Other _____	☐	☐	☐	☐

II. **GENERAL INFORMATION** (continued)

E. Rate the ***level of success*** of the articulation program in achievement of its goals

	High Success (1)	Moderate Success (2)	Low Success (3)	No Success (4)
1. Increased service to students	☐	☐	☐	☐
2. Increased service to employers	☐	☐	☐	☐
3. Program improvement/educational excellence	☐	☐	☐	☐
4. Student retention	☐	☐	☐	☐
5. Reduction of program cost	☐	☐	☐	☐
6. Other _____	☐	☐	☐	☐

F. Check the following definition that best describes the vocational technical education articulation program(s) between your school and the postsecondary institution(s) with which there is a/are written articulation agreement(s).

☐ **Time-shortened program**: The primary objective of this program is eliminating unnecessary course duplication. To accomplish this, programs typically grant some type of advanced placement to high school students upon entering a postsecondary program.

☐ **Tech prep program**: The primary objective of this program is to prepare secondary vocational-technical students for success in advanced postsecondary-technical programs. To accomplish this, the secondary program typically provides a core curriculum such as courses in applied mathematics, science, and critical literacy.

☐ **Vocational technical 2 + 2 program**: The primary objective of this program is to provide a tightly coordinated occupational program for grades 11-14 (2 years of high school courses plus 2 years of postsecondary-technical courses). To accomplish this, secondary and postsecondary institutions typically develop new or completely rewritten competency-based curriculum for each technical specialty and may employ a career ladder approach which enables students to exit the program with a certificate of competency upon completion of grades 12, 13 or 14.

III. **STUDENT ENROLLMENT IN PROGRAMS BY GRADE LEVEL**

Directions: Please indicate the program area(s) that best describe(s) the vocational-technical education articulation programs in which your institution is involved by writing the number of students enrolled in them by grade level 10 through 12 in the appropriate space.

	No. of Students by Grade Level		
	10	11	12
A. **Agriculture**			
1. Production Agriculture			
2. Horticulture			
3. Farm Business Management			
4. Other, please identify _____			
_____			
B. **Business/Office Education**			
1. Clerical			
2. Secretarial/Word and Information Processing			
3. Data Processing			
4. Accounting			
5. Other, please identify _____			
_____			

III. **STUDENT ENROLLMENT IN PROGRAMS BY GRADE LEVEL** (continued)

	No. of Students by Grade Level		
C. **Health Occupations**	10	11	12
1. Nursing			
2. Medical/Dental/Optometric Assisting, Home Health Aide, Gerontological Aide			
3. Dental Hygiene			
4. Dental Lab Technology			
5. Radiation Technology			
6. Respiratory Therapy			
7. Veterinary Assisting and Related			
8. Other, please identify _____ _____			
D. **Home Economics**			
1. Food Service/Culinary Arts/Baking and Related			
2. Childcare and Guidance			
3. Aged Care, Companionship, Homemaker Aid, etc.			
4. Clothing, Apparel and Textiles production and services including Uphjolstery Repair, Commercial Sewing, Tailoring			
5. Other, please identify _____ _____			

III. **STUDENT ENROLLMENT IN PROGRAMS BY GRADE LEVEL** (continued)

	No. of Students by Grade Level		
	10	11	12
E. **Marketing Education**			
1. Hospitality and Recreation (Hotel/Motel, related business and personal services)			
2. Marketing (fashion, merchandising, advertising, etc.)			
3. Mid-Management			
4. Small Business Management/Entrepreneurship			
5. Other, please identify _____ _____			
F. **Technical/Technology Education**			
1. Electronics Technology (general)			
2. Electro-Mechanical/Robotics, Laser Optics technology			
3. Telecommunications Technology			
4. Drafting and Design Technology			
5. Civil Engineering Technology			
6. Other, please identify _____ _____			

III. **STUDENT ENROLLMENT IN PROGRAMS BY GRADE LEVEL** (continued)

G. **Trade and Industrial Education**	No. of Students by Grade Level		
	10	11	12
1. Electrical/Electronics equipment repair and related			
2. Mechanical repair including: Automotive, Diesel, Aircraft and related			
3. Heating, Ventilation, Air Conditioning, Industrial Miscellaneous and related			
4. Construction Trades including Electrical			
5. Precision Metal Work including Machining, Fabrication, Welding, Sheet Metal and related			
6. Other, please identify _____ _____			

IV. **ARTICULATION PROGRAM FEATURES**

Directions: Below are features that have been identified by some researchers as factors that contribute to the success or failure of secondary-postsecondary articulation programs. If the feature applies to your institution's articulation program, indicate its degree of importance to your articulation program's success ***by checking one of the first four boxes. If it is not a feature, check box 5; if you have no opinion or knowledge, check box 6.***

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)	Not a Feature (5)	No Opinion or Knowledge (6)
A. **Commitment**						
1) State department of education officials (K-12) view vocational technical education articulation as a high department priority.	☐	☐	☐	☐	☐	☐

IV. **ARTICULATION PROGRAM FEATURES** (continued)

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)	Not a Feature (5)	No Opinion or Knowledge (6)
2) State postsecondary education officials view vocational-technical articulation as a high departmental priority.	☐	☐	☐	☐	☐	☐
3) Local postsecondary administrators in participating institutions view vocational-technical articulation as a high institutional priority.	☐	☐	☐	☐	☐	☐
4) Local secondary administrators view vocational-technical articulation as a high institutional priority.	☐	☐	☐	☐	☐	☐
5) State level incentives are provided for secondary-postsecondary articulation of vocational-technical education programs.	☐	☐	☐	☐	☐	☐
6) The faculty teaching in participating secondary institutions regard the articulation process as a personal priority.	☐	☐	☐	☐	☐	☐
7) The postsecondary teaching faculty regard the articulation program as a personal priority.	☐	☐	☐	☐	☐	☐
8) Guidance and counseling personnel in participating secondary institutions view the articulation process as a personal priority.	☐	☐	☐	☐	☐	☐

IV. **ARTICULATION PROGRAM FEATURES** (continued)

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)	Not a Feature (5)	No Opinion or Knowledge (6)
9) Postsecondary counseling personnel view the articulation process as a personal priority.	☐	☐	☐	☐	☐	☐
B. Scheduling						
1) Common school calendars have been adopted among the postsecondary and participating secondary institutions.	☐	☐	☐	☐	☐	☐
2) Courses related to the articulation program are offered at hours nontraditional to the public school (for example, early morning, late evening, summer).	☐	☐	☐	☐	☐	☐
C. Faculty						
1) Postsecondary and secondary faculty participating in the articulation program have effective working relationships.	☐	☐	☐	☐	☐	☐
2) Postsecondary and secondary faculty participating in the articulation program meet at least once a year to address curriculum.	☐	☐	☐	☐	☐	☐
3) Faculty members in the articulation program have shared teaching responsibility between the postsecondary and participaing institutions.	☐	☐	☐	☐	☐	☐

IV. **ARTICULATION PROGRAM FEATURES** (continued)

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)	Not a Feature (5)	No Opinion or Knowledge (6)
D. Curriculum and Instruction						
1) The curriculum is competency-based.	☐	☐	☐	☐	☐	☐
2) The curriculum was developed jointly by the instructors from the participating institutions/schools.	☐	☐	☐	☐	☐	☐
3) Program goals and objectives are clearly understood by faculty at the participating secondary institution.	☐	☐	☐	☐	☐	☐
4) Program goals and objectives are clearly understood by faculty at the postsecondary institution.	☐	☐	☐	☐	☐	☐
5) The articulation program is open entry/open exit.	☐	☐	☐	☐	☐	☐
E. Student Programs						
1) Vocational/technical student organizations are active in the articulated program areas.	☐	☐	☐	☐	☐	☐
2) Remediation services for students are available as part of the articulation program.	☐	☐	☐	☐	☐	☐

IV. **ARTICULATION PROGRAM FEATURES** (continued)

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)	Not a Feature (5)	No Opinion or Knowledge (6)
F. Planning/Evaluation						
1) The postsecondary and secondary administrators and faculty in the articulation program engage in joint labor market planning.	☐	☐	☐	☐	☐	☐
2) The secondary and postsecondary components of the articulation program use joint advisory committees.	☐	☐	☐	☐	☐	☐
(3) The articulation program was started with modest initial goals.	☐	☐	☐	☐	☐	☐
(4) Secondary and postseccondary components of the articulation program use a common evaluation system.	☐	☐	☐	☐	☐	☐
G. Administration						
(1) The articulation program operates under a single state authority (state board, state administering agency or common definitions and philosophy).	☐	☐	☐	☐	☐	☐
(2) The articulation program operates under two (2) or more state authorities who share a common definition and philosophy about articulation.	☐	☐	☐	☐	☐	☐

IV. **ARTICULATION PROGRAM FEATURES** (continued)

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)	Not a Feature (5)	No Opinion or Knowledge (6)
(3) There is a single articulation program coordinator for participating secondary and postsecondary institutions.	☐	☐	☐	☐	☐	☐

H. **Facilities**

(1) The secondary and postsecondary components of the articulation program use joint education/training facilities.	☐	☐	☐	☐	☐	☐

V. **STUDENT-RELATED PROGRAM FEATURES**

Following are questions on student-related program features. Please check the appropriate response as it relates to your school's articulation program.

A. How do completion rates of students in the articulation program compare to completion rates of students in nonarticulated programs? Articulation program completion rates are (check one)--

☐ higher ☐ about the same ☐ lower

B. Indicate the approximate percentage of participating students in the following categories:

_____ % Black
_____ % Hispanic
_____ % Asian
_____ % Native American (Indian)
_____ % Other _____

_____ % economically disadvantaged
_____ % needing academic remediation
_____ % physically handicapped
_____ % academically advanced (honors)

V. **STUDENT-RELATED PROGRAM FEATURES** (continued)

C. Are students awarded credit in the postsecondary program for skills and knowledge competencies gained in the secondary education component of the articulated program?

☐ Yes

☐ No

D. Are students awarded advanced standing in the postsecondary program for skills and knowledge competencies gained in the secondary education component of the articulated program?

☐ Yes

☐ No

E. Are students who are enrolled in the Secondary Component of the articulated program simultaneously enrolled as postsecondary students?

☐ Yes

☐ No

If "yes," where is the student FTE counted? Check only one answer.

☐ Secondary FTE

☐ Postsecondary FTE

☐ Both secondary and postsecondary FTE

F. The average annual per pupil expenditures for secondary students in articulated programs, compared to those of students in nonarticulated programs are (choose one)--

☐ higher ☐ lower ☐ about the same

G. The average rate of absenteeism per school year for secondary students in the articulated programs compared to that for students in nonarticulated programs is (choose one)--

☐ higher ☐ lower ☐ about the same

V. **STUDENT-RELATED PROGRAM FEATURES** (continued)

H. What are the evaluation measures used for the articulated program at your institution? Check all that apply.

- ☐ increased enrollment
- ☐ increased completion rate
- ☐ increased job placements
- ☐ others (please list)_____
  _____
  _____
  _____
  _____

I. What are the major means of articulation program promotion? Please number 1, 2, 3, 4 in order of importance.

- ( ) T.V.
- ( ) Radio
- ( ) Newspapers
- ( ) Others (please list) ____
  _____
  _____
  _____
  _____

J. What are the most common ways students learn about the articulation program? Please number 1,2,3,4 in order of importance.

- ( ) Secondary guidance counselors
- ( ) Secondary teachers
- ( ) Other students
- ( ) Promotional material
- ( ) Others _____
  _____

VI. ARTICULATION PROGRAM INITIATORS

A. Please list the *titles* of the 3 most important institutional employees to the initiation of an articulated program. No names, please.

1. _____
2. _____
3. _____

VII. INTERINSTITUTIONAL RELATIONSHIPS

Directions: Please read the statement regarding interinstitutional relationships and check your level of agreement or disagreement as it relates to your articulation program.

	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
A) Interpersonal relations between secondary and post-secondary faculty are highly effective.	☐	☐	☐	☐
B) Instructors at the secondary and postsecondary levels in the program are viewed as having equal credibility.	☐	☐	☐	☐
C) Program goals and objectives are clearly identified and are understood by secondary and postsecondary administrators and faculty.	☐	☐	☐	☐
D) Standard competencies for the articulation program are clearly identified.	☐	☐	☐	☐
E) The program operates with strong commitment and leadership from the top.	☐	☐	☐	☐
F) Participating secondary and postsecondary faculty were involved early in the articulation process.	☐	☐	☐	☐

VII. **INTERINSTITUTIONAL RELATIONSHIPS** (continued)

	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
G) Relationships between the postsecondary and secondary administrators in the program are based on mutual respect and trust.	☐	☐	☐	☐
H) ***Administrators*** in the postsecondary and secondary institutions see the articulation program as providing mutual benefits to both institutions.	☐	☐	☐	☐
I) ***Faculty*** in the postsecondary and secondary institutions see the articulation program as providing mutual benefits to both institutions.	☐	☐	☐	☐
J) Communication between secondary and postsecondary faculty in the program is open, clear, and frequent.	☐	☐	☐	☐
K) The focus between the postsecondary and secondary institutions is on mutual goals rather than on ***"turf"*** considerations.	☐	☐	☐	☐
L) Responsibilities of secondary and postsecondary components of the program are clearly defined.	☐	☐	☐	☐

VIII. Thank you for completing this survey. Please return in the enclosed pre-addressed envelope by **October 21, 1987**.

If you have any questions about this survey, please call **Dr. Floyd McKinney** or **Dr. Ernest Fields** at **800/848-4815** (or **614/486-3655** if you are in Ohio, Alaska or Hawaii).

POSTSECONDARY VOCATIONAL-TECHNICAL EDUCATION ARTICULATION SURVEY

The purpose of this survey is to collect relevant information for a national study of secondary to postsecondary articulation of vocational technical education programs. The study is being conducted by the National Center for Research in Vocational Education at The Ohio State University under contract with the U.S. Department of Education. Outcomes of this study will include--

- o a description of successes of secondary and postsecondary schools in meeting their projected articulation outcomes,
- o identification of factors which influence the attainment of articulation outcomes, and
- o recommendations for institutional consideration when implementing or modifying vocational technical education articulation programs.

Definitions that may be useful to you in completing this survey instrument are found in Attachment A.

I. RESPONDENT INFORMATION

Please complete the following:

Institution _____ (name)
_____ (address)
_____ City State Zip

Respondent _____
Title _____
Telephone No. _____

II. GENERAL INFORMATION

Directions: Please make the appropriate response.

A. Your institution is a:

1. ☐ Public vocational school technical or trade school/institute, junior or community college
2. ☐ Four-year institution offering vocational/technical associates degree
3. ☐ Other _____

II. **GENERAL INFORMATION** (continued)

B. Your institution has had a written articulation agreement with one or more public secondary schools for at least three years.

1. ☐ Yes

2. ☐ No (Do not fill out the rest of the questionnaire. Turn to Section VIII for instructions.)

C. The articulation program was initiated by (check more than one if jointly initiated)--

☐ State postsecondary education office

☐ State department of education (K-12)

☐ local postsecondary institution

☐ local secondary school district

☐ area or regional vocational institution

☐ other _____

D. Rate the ***level of importance*** of each item as a goal of the articulation program

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)
1. Increased service to students	☐	☐	☐	☐
2. Increased service to employers	☐	☐	☐	☐
3. Program improvement/educational excellence	☐	☐	☐	☐
4. Student retention	☐	☐	☐	☐
5. Reduction of program cost	☐	☐	☐	☐
6. Other _____	☐	☐	☐	☐

II. **GENERAL INFORMATION** (continued)

E. Rate the ***level of success*** of the articulation program in achievement of its goals

	High Success (1)	Moderate Success (2)	Low Success (3)	No Success (4)
1. Increased service to students	☐	☐	☐	☐
2. Increased service to employers	☐	☐	☐	☐
3. Program improvement/educational excellence	☐	☐	☐	☐
4. Student retention	☐	☐	☐	☐
5. Reduction of program cost	☐	☐	☐	☐
6. Other _____	☐	☐	☐	☐

F. Check the following definition that best describes the vocational technical education articulation program(s) between your institution and the postsecondary school(s) with which there is a/are written articulation agreement(s).

☐ **Time-shortened program**: The primary objective of this program is eliminating unnecessary course duplication. To accomplish this, programs typically grant some type of advanced placement to high school students upon entering a postsecondary program.

☐ **Tech prep program**: The primary objective of this program is to prepare secondary vocational-technical students for success in advanced postsecondary-technical programs. To accomplish this, the secondary program typically provides a core curriculum such as courses in applied mathematics, science, and critical literacy.

☐ **Vocational technical 2 + 2 program**: The primary objective of this program is to provide a tightly coordinated occupational program for grades 11-14 (2 years of high school courses plus 2 years of postsecondary-technical courses). To accomplish this, secondary and postsecondary institutions typically develop new or completely rewritten competency-based curriculum for each technical specialty and may employ a career ladder approach which enables students to exit the program with a certificate of competency upon completion of grades 12, 13 or 14.

III. **STUDENT ENROLLMENT IN PROGRAMS BY GRADE LEVEL**

Directions: Please indicate the program area(s) that best describe(s) the vocational-technical education articulation programs in which your institution is involved by writing the number of students enrolled in them by grade level 13 or 14 in the appropriate space.

	No. of Students by Grade Level	
	13	14
A. Agriculture		
1. Production Agriculture		
2. Horticulture		
3. Farm Business Management		
4. Other, please identify _____		
_____		
B. Business/Office Education		
1. Clerical		
2. Secretarial/Word and Information Processing		
3. Data Processing		
4. Accounting		
5. Other, please identify _____		
_____		

III. **STUDENT ENROLLMENT IN PROGRAMS BY GRADE LEVEL** (continued)

	No. of Students by Grade Level	
C. Health Occupations	13	14
1. Nursing		
2. Medical/Dental/Optometric Assisting, Home Health Aide, Gerontological Aide		
3. Dental Hygiene		
4. Dental Lab Technology		
5. Radiation Technology		
6. Respiratory Therapy		
7. Veterinary Assisting and Related		
8. Other, please identify _____ _____		
D. Home Economics		
1. Food Service/Culinary Arts/Baking and Related		
2. Childcare and Guidance		
3. Aged Care, Companionship, Homemaker Aid, etc.		
4. Clothing, Apparel and Textiles production and services including Uphjolstery Repair, Commercial Sewing, Tailoring		
5. Other, please identify _____ _____		

III. **STUDENT ENROLLMENT IN PROGRAMS BY GRADE LEVEL** (continued)

	No. of Students by Grade Level	
	13	14
E. **Marketing Education**		
1. Hospitality and Recreation (Hotel/Motel, related business and personal services)		
2. Marketing (fashion, merchandising, advertising, etc.)		
3. Mid-Management		
4. Small Business Management/Entrepreneurship		
5. Other, please identify _____ _____		
F. **Technical/Technology Education**		
1. Electronics Technology (general)		
2. Electro-Mechanical/Robotics, Laser Optics technology		
3. Telecommunications Technology		
4. Drafting and Design Technology		
5. Civil Engineering Technology		
6. Other, please identify _____ _____		

III. **STUDENT ENROLLMENT IN PROGRAMS BY GRADE LEVEL** (continued)

	No. of Students by Grade Level	
G. **Trade and Industrial Education**	13	14
1. Electrical/Electronics equipment repair and related		
2. Mechanical repair including: Automotive, Diesel, Aircraft and related		
3. Heating, Ventilation, Air Conditioning, Industrial Miscellaneous and related		
4. Construction Trades including Electrical		
5. Precision Metal Work including Machining, Fabrication, Welding, Sheet Metal and related		
6. Other, please identify _____ _____		

IV. **ARTICULATION PROGRAM FEATURES**

Directions: Below are features that have been identified by some researchers as factors that contribute to the success or failure of secondary-postsecondary articulation programs. If the feature applies to your institution's articulation program, indicate its degree of importance to your articulation program's success ***by checking one of the first four boxes. If it is not a feature, check box 5; if you have no opinion or knowledge, check box 6.***

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)	Not a Feature (5)	No Opinion or Knowledge (6)
A. **Commitment**						
1) State department of education officials (K-12) view vocational technical education articulation as a high department priority.	☐	☐	☐	☐	☐	☐

IV. **ARTICULATION PROGRAM FEATURES** (continued)

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)	Not a Feature (5)	No Opinion or Knowledge (6)
2) State postsecondary education officials view vocational-technical articulation as a high departmental priority.	☐	☐	☐	☐	☐	☐
3) Local postsecondary administrators in participating institutions view vocational-technical articulation as a high institutional priority.	☐	☐	☐	☐	☐	☐
4) Local secondary administrators view vocational-technical articulation as a high institutional priority.	☐	☐	☐	☐	☐	☐
5) State level incentives are provided for secondary-postsecondary articulation of vocational-technical education programs.	☐	☐	☐	☐	☐	☐
6) The faculty teaching in participating secondary institutions regard the articulation process as a personal priority.	☐	☐	☐	☐	☐	☐
7) The postsecondary teaching faculty regard the articulation program as a personal priority.	☐	☐	☐	☐	☐	☐
8) Guidance and counseling personnel in participating secondary institutions view the articulation process as a personal priority.	☐	☐	☐	☐	☐	☐

IV. **ARTICULATION PROGRAM FEATURES** (continued)

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)	Not a Feature (5)	No Opinion or Knowledge (6)
9) Postsecondary counseling personnel view the articulation process as a personal priority.	☐	☐	☐	☐	☐	☐
B. Scheduling						
1) Common school calendars have been adopted among the postsecondary and participating secondary institutions.	☐	☐	☐	☐	☐	☐
2) Courses related to the articulation program are offered at hours nontraditional to the public school (for example, early morning, late evening, summer).	☐	☐	☐	☐	☐	☐
C. Faculty						
1) Postsecondary and secondary faculty participating in the articulation program have effective working relationships.	☐	☐	☐	☐	☐	☐
2) Postsecondary and secondary faculty participating in the articulation program meet at least once a year to address curriculum.	☐	☐	☐	☐	☐	☐
3) Faculty members in the articulation program have shared teaching responsibility between the postsecondary and participating institutions.	☐	☐	☐	☐	☐	☐

IV. **ARTICULATION PROGRAM FEATURES** (continued)

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)	Not a Feature (5)	No Opinion or Knowledge (6)
D. Curriculum and Instruction						
1) The curriculum is competency-based.	☐	☐	☐	☐	☐	☐
2) The curriculum was developed jointly by the instructors from the participating institutions/schools.	☐	☐	☐	☐	☐	☐
3) Program goals and objectives are clearly understood by faculty at the participating secondary institution.	☐	☐	☐	☐	☐	☐
4) Program goals and objectives are clearly understood by faculty at the postsecondary institution.	☐	☐	☐	☐	☐	☐
5) The articulation program is open entry/open exit.	☐	☐	☐	☐	☐	☐
E. Student Programs						
1) Vocational/technical student organizations are active in the articulated program areas.	☐	☐	☐	☐	☐	☐
2) Remediation services for students are available as part of the articulation program.	☐	☐	☐	☐	☐	☐

IV. **ARTICULATION PROGRAM FEATURES** (continued)

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)	Not a Feature (5)	No Opinion or Knowledge (6)
F. Planning/Evaluation						
1) The postsecondary and secondary administrators and faculty in the articulation program engage in joint labor market planning.	☐	☐	☐	☐	☐	☐
2) The secondary and postsecondary components of the articulation program use joint advisory committees.	☐	☐	☐	☐	☐	☐
(3) The articulation program was started with modest initial goals.	☐	☐	☐	☐	☐	☐
(4) Secondary and postsecondary components of the articulation program use a common evaluation system.	☐	☐	☐	☐	☐	☐
G. Administration						
(1) The articulation program operates under a single state authority (state board, state administering agency or common definitions and philosophy).	☐	☐	☐	☐	☐	☐
(2) The articulation program operates under two (2) or more state authorities who share a common definition and philosophy about articulation.	☐	☐	☐	☐	☐	☐

IV. **ARTICULATION PROGRAM FEATURES** (continued)

	High Importance (1)	Medium Importance (2)	Low Importance (3)	No Importance (4)	Not a Feature (5)	No Opinion or Knowledge (6)
(3) There is a single articulation program coordinator for participating secondary and postsecondary institutions.	☐	☐	☐	☐	☐	☐

H. **Facilities**

(1) The secondary and postsecondary components of the articulation program use joint education/training facilities.	☐	☐	☐	☐	☐	☐

V. **STUDENT-RELATED PROGRAM FEATURES**

Following are questions on student-related program features. Please check the appropriate response as it relates to your school's articulation program.

A. How do completion rates of students in the articulation program compare to completion rates of students in nonarticulated programs? Articulation program completion rates are (check one)--

☐ higher ☐ about the same ☐ lower

B. Indicate the approximate percentage of participating students in the following categories:

_____ % Black
_____ % Hispanic
_____ % Asian
_____ % Native American (Indian)
_____ % Other _____

_____ % economically disadvantaged
_____ % needing academic remediation
_____ % physically handicapped
_____ % academically advanced (honors)

V. **STUDENT-RELATED PROGRAM FEATURES** (continued)

C. Are students awarded credit in the postsecondary program for skills and knowledge competencies gained in the secondary education component of the articulated program?

☐ Yes

☐ No

D. Are students awarded advanced standing in the postsecondary program for skills and knowledge competencies gained in the secondary education component of the articulated program?

☐ Yes

☐ No

E. As the receiving institution, do you require testing to determine skills and knowledge competencies the student achieved in the secondary component of the articulated program.

☐ Yes

☐ No

F. Are students who are enrolled in the Secondary Component of the articulated program simultaneously enrolled as postsecondary students?

☐ No

☐ Yes

If "yes," where is the student FTE counted? Check only one answer.

☐ Secondary FTE

☐ Postsecondary FTE

☐ Both secondary and postsecondary FTE

G. The average annual per pupil expenditures for postsecondary students in articulated programs, compared to those of students in nonarticulated programs are (choose one)--

☐ higher ☐ lower ☐ about the same

V. **STUDENT-RELATED PROGRAM FEATURES** (continued)

H. The average rate of absenteeism per school year for postsecondary students in the articulated programs compared to that for students in nonarticulated programs is (choose one)--

☐ higher ☐ lower ☐ about the same

I. What are the evaluation measures used for the articulated program at your institution? Check all that apply.

☐ increased enrollment

☐ increased completion rate

☐ increased job placements

☐ others (please list)_____
_____
_____
_____
_____

J. What are the major means of articulation program promotion? Please number 1, 2, 3, 4 in order of importance.

( ) T.V.

( ) Radio

( ) Newspapers

( ) Others (please list) ____
_____
_____
_____
_____

K. What are the most common ways students learn about the articulation program? Please number 1,2,3,4 in order of importance.

( ) Secondary guidance counselors
( ) Secondary teachers
( ) Other students
( ) Promotional material
( ) Others _____
_____

VI. ARTICULATION PROGRAM INITIATORS

A. Please list the *titles* of the 3 most important institutional employees to the initiation of an articulated program. No names, please.

1. _____
2. _____
3. _____

VII. INTERINSTITUTIONAL RELATIONSHIPS

Directions: Please read the statement regarding interinstitutional relationships and check your level of agreement or disagreement as it relates to your articulation program.

	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
A) Interpersonal relations between secondary and post-secondary faculty are highly effective.	☐	☐	☐	☐
B) Instructors at the secondary and postsecondary levels in the program are viewed as having equal credibility.	☐	☐	☐	☐
C) Program goals and objectives are clearly identified and are understood by secondary and postsecondary administrators and faculty.	☐	☐	☐	☐
D) Standard competencies for the articulation program are clearly identified.	☐	☐	☐	☐
E) The program operates with strong commitment and leadership from the top.	☐	☐	☐	☐

VII. **INTERINSTITUTIONAL RELATIONSHIPS** (continued)

	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
F) Participating secondary and postsecondary faculty were involved early in the articulation process.	☐	☐	☐	☐
G) Relationships between the postsecondary and secondary administrators in the program are based on mutual respect and trust.	☐	☐	☐	☐
H) ***Administrators*** in the postsecondary and secondary institutions see the articulation program as providing mutual benefits to both institutions.	☐	☐	☐	☐
I) ***Faculty*** in the postsecondary and secondary institutions see the articulation program as providing mutual benefits to both institutions.	☐	☐	☐	☐
J) Communication between secondary and postsecondary faculty in the program is open, clear, and frequent.	☐	☐	☐	☐
K) The focus between the postsecondary and secondary institutions is on mutual goals rather than on ***"turf"*** considerations.	☐	☐	☐	☐
L) Responsibilities of secondary and postsecondary components of the program are clearly defined.	☐	☐	☐	☐

VIII. Thank you for completing this survey. Please return in the enclosed pre-addressed envelope by **October 16, 1987**.

If you have any questions about this survey, please call **Dr. Floyd McKinney** or **Dr. Ernest Fields** at **800/848-4815** (or **614/486-3655** if you are in Ohio, Alaska or Hawaii).

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